

CONSUMERS' RESPONSE TO REALLY NEW PRODUCTS: A COHESIVE SYNTHESIS OF CURRENT RESEARCH AND FUTURE RESEARCH DIRECTIONS

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The past decades have witnessed an abundance of research on how consumers learn about, evaluate, and adopt really new products (RNPs)—products that are hard to define using existing product categories and require behavioural changes. Yet, every year, RNPs fail to garner consumer enthusiasm despite promising interesting new features and benefits. The goal of this research is to synthesise extant RNP knowledge with a focus on consumer behaviour and identify future research opportunities. To that end, we screened 587 papers published in marketing journals related to new products and focused on all those that specifically examine consumers' reaction to new products (53 core papers). We build their findings into a cohesive framework illuminating how consumers learn about RNPs and evaluate their novel benefits considering the uncertainty surrounding these benefits. We also derive recommendations for managers to communicate the utility of a RNP more effectively. We conclude by identifying under-researched aspects and offering suggestions for future research.

Keywords: Really new products; consumer reactions; research agenda.

Introduction

In this work, we systematically review research findings on consumers' learning and evaluation of RNPs that ultimately lead to adoption decisions and provide a

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cohesive framework to organise these findings. Our synthesised framework can help managers involved in the launch of RNPs leverage existing RNP knowledge to effectively communicate the benefits of the RNP to consumers. For successful RNP development, it is critical for the managers to understand consumers' different psychologies during the concept testing and actual adoption decision, and construct the concept test accordingly to achieve results valid for the future market projection (Ozer, 2011; Peng and Finn, 2010). As such, we contend that the domain of innovation management can learn valuable insights by understanding the drivers of consumer reactions to RNPs.

Consider a fictional scenario in which consumers and potential customers are contemplating the pros and cons of adopting the world's first fully functional autonomous car. They face many difficult questions: How well will the car work, will it be safe, how useful will it be to delegate "driving" to the car and shift their attention to other things, will they miss driving themselves, and how might their friends react? Ultimately, the key question for them is, "Should we buy it?" This scenario exemplifies some of the challenges facing consumers who are considering the adoption of a RNP. Much of the challenge is due to difficulties consumers have learned about a RNP as they try to evaluate its novel benefits in light of the behavioural changes required to utilise these benefits. Consequently, these difficulties of learning about RNPs and making sense of their utility may lead to suboptimal adoption/rejection decisions.

Naturally, these challenges also translate into important managerial problems. First, many RNPs that are introduced in the marketplace are characterised by slow adoption and diffusion, and even outright failure (TiVo, Google Glass, 3D TV, and Segway are some prominent examples; Gourville, 2006). All too often, firms fail to develop RNPs that provide anticipated utility for consumers (Simester, 2016), or they fail to communicate the RNP's utility effectively (Steenburgh and Ahearne, 2018). These problems are devastating from a managerial perspective because the development and introduction of RNPs are costly, and vital for firms' long-term success (e.g., Sorescu and Spanjol, 2008). Second, managers might invite consumers to evaluate a RNP during the product development process, but consumers might not always be capable of accurately predicting their new product preference (Schoormans *et al.*, 1995). Given that launch decision for RNP projects are often made based on the projections of market performance derived from concept tests (Cooper, 2008; Dahan and Srinivasan, 2000; Ozer, 2011), it is crucial for managers to have valid data at their hands to understand consumers' discrepancy between prediction and actual product adoption (Alexander *et al.*, 2008; Urban *et al.*, 1996).

While consumers' response to innovations has been of interest to researchers for a long time, resulting in several seminal works on the topic (e.g., Rogers, 2003; Ram and Sheth, 1989), it is only since the late 1980s that researchers have

distinguished RNPs from incrementally new products (INPs)—products that represent some improvement to existing products. This focus on RNP was motivated by calls for research from both practitioners and researchers. For example, the Marketing Science Institute (MSI) persistently and prominently highlighted the importance of increasing our knowledge about the successful development and marketing of RNPs from the early 1990s until today in their influential research priorities.

Indeed, the amount of RNP research that followed is vast and spans areas from how to organise and ideate for RNP success to improving RNP diffusion. A major stream of literature centred in the domain of consumer psychology has sought to understand the underlying psychological mechanisms associated with consumer reactions to RNPs. As is the nature of an emerging area of research, while lots of interesting and unique approaches and findings have emerged to help us better understand consumer reactions to RNPs, the constructs are varied, and the empirical findings are fragmented.

Literature reviews relating to RNPs do exist but have different foci such as a firm's development capabilities (Slater *et al.*, 2014). Other studies adopt a firm perspective rather than consumers' psychological processes, summarising which internal or external barriers need to be overcome (Sandberg and Aarikka-Stenroos, 2014). Along similar lines, Schuhmacher *et al.* (2008) review the extant literature on RNPs as they develop their hypotheses, but this literature adopts a firm perspective of effective go-to-market strategy elements. To the best of our knowledge, no cohesive framework exists which thoroughly examines the psychological mechanisms driving consumers' reactions to RNPs.

In response, our research seeks to synthesise existing findings related to consumers' reactions to RNPs and it contributes in multiple ways. Our first contribution is the creation of a framework (see Fig. 1) that will enable us to distil fragmented findings from extant research in a way that will be useful for RNP researchers, managers, and consumers. Through grouping papers (findings) by a theoretical base, we were able to create new knowledge in addressing the overall role of uncertainty in the adoption process, and specifically around how consumers learn and evaluate RNPs. We also contribute to the RNP literature by providing directions for future research with a special focus on the role of uncertainty.

In the next sections, we present the results of our synthesis of RNP knowledge to both help consumers estimate the potential usefulness of a RNP more accurately, and managers to communicate the utility of a RNP more effectively. In the last section of this paper, we present future research avenues for RNPs to advance existing knowledge on consumers' reactions to RNPs in light of the role of uncertainty.

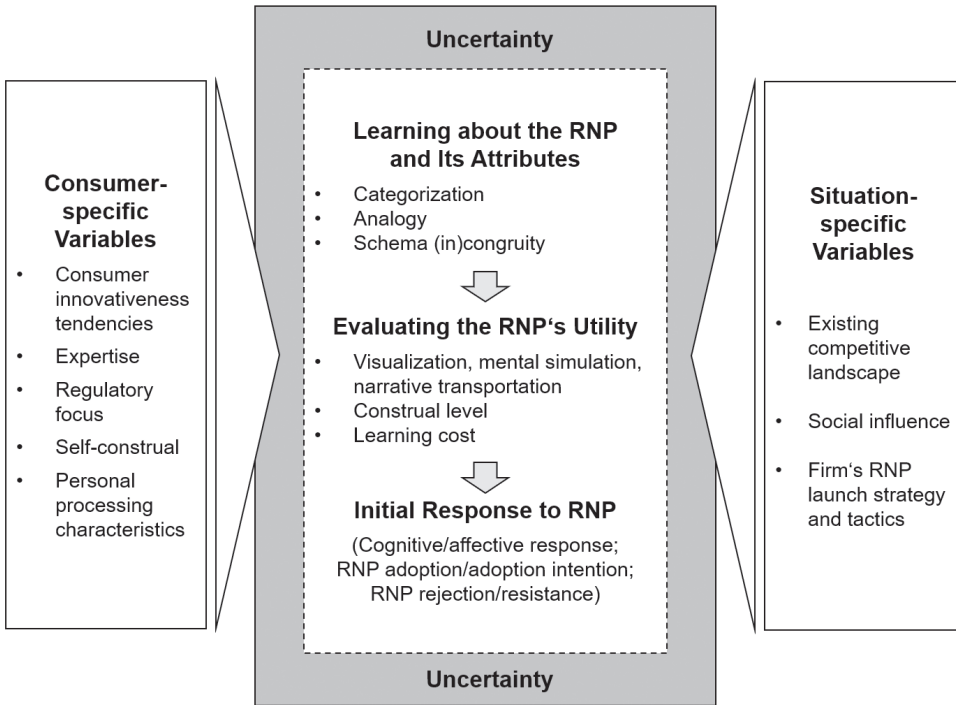


Fig. 1. Conceptual framework for improving consumer learning and evaluation of the RNP.

Theoretical Background

Defining RNPs

There is no widely agreed-upon definition of what constitutes a RNP, but most researchers seem to agree that they revolutionise existing product categories, define new ones, or defy classification within existing categories (e.g., Gregan-Paxton and John, 1997; Lehmann, 1994). These characteristics distinguish RNPs from INPs. Thus, consumers are, by definition, initially unfamiliar with the new product (Veryzer, 1998), giving rise to the necessity to learn about the RNP (Lehmann, 1994). Other researchers highlight the aspect of behavioural change, such that RNPs not only enable consumers to do things they have not been able to do before (Zhao *et al.*, 2012), but in many cases *require* consumers to alter their behaviour in order for them to use the product (Veryzer, 1998). Based on these insights, for the purpose of this consumer-centric research we define RNPs as new products that revolutionise existing product categories or define entirely new ones, and induce new usage patterns for consumers. Hence, communicating the novel benefits of RNPs to help consumers fully understand the benefits and reduce their uncertainty about behavioural change is critical to the RNP's success. Note that our research is

focused on the adoption of RNPs that are being introduced in the market. Some of the same conceptual difficulties faced by consumers when evaluating the usefulness of a RNP exist for consumers who are considering the adoption of an unfamiliar, yet established product. For example, a consumer considering the switch from Android to IOS cell platforms will have some of the same issues with learning curves regarding using the new operating system. However, the key difference is that since both are mature platforms, there exist extensive tutorials and testimonials not available for RNPs being introduced to the market.

Researchers also highlight that RNPs often represent, or are based on, a new technology (e.g., Urban *et al.*, 1996). While we agree that new technologies often go hand in hand with RNPs, we do not consider this a necessary defining characteristic of a RNP from a consumer standpoint because a novel technology does not always require behaviour change. To clarify, let us look at two examples. Autonomous cars are indeed based on new technology (artificial intelligence, etc.) that revolutionises the conventional car category, making it difficult for consumers to accurately predict how much utility they will derive for an autonomous vehicle. Contrast that with a so-called thermoacoustic refrigerator, which has a revolutionary technology that chills food using sound waves (Poese *et al.*, 2004). The adoption decision for a thermoacoustic refrigerator should be less challenging for consumers because it does not require any behavioural change (in say, cooling their food), unlike the autonomous car. Thus, it is the required behavioural changes that create greater challenges in evaluating the RNP because consumers often find it difficult to assess the utility offered by the novel features of the product given it requires new usage patterns.

Finally, we note that several alternative terms have been used mostly synonymously in the literature to refer to what we term RNPs in the current work, such as “really new innovations” (e.g., Ma *et al.*, 2015), “discontinuous new products” (Veryzer, 1998), “radical innovations” (Reinders *et al.*, 2010), “truly new innovations” (Gregan-Paxton and John, 1997) and, most recently “big innovations” (Moreau and Wood, 2019).

Development of an Organising Framework

Consumer response as a key focus

Prior consumer-centric research on innovations has sought to tease apart distinct outcomes of the innovation-decision process. For instance, in his classic book, Rogers (2003) conceptualises the innovation-decision process to have five stages: knowledge, persuasion, decision, implementation, and confirmation. In the decision phase, the consumer “engages in activities that lead to a choice to adopt or reject the innovation” (p. 177). This choice may be reconsidered in the confirmation stage,

ultimately leading to the possible outcomes of continued adoption, later adoption, discontinuance, or continued rejection. Hoeffler (2003) put forth a more parsimonious RNP adoption process that includes three stages. In the first stage, “What is it?” consumers learn about the RNP and its attributes. The need to learn about the RNP implies that consumers may have difficulties applying existing category knowledge to the RNP because by definition it revolutionises product categories or defines a new one. In the second stage, “What of it and me?” consumers evaluate the RNP’s utility. After understanding the new product features consumers assess whether and in which situations the new functionalities will be of value to them. The final stage is the “initial reaction to the RNP,” which captures the potential adoption outcomes (e.g., adoption intention, adoption, rejection). Accordingly, the key outcomes we focus on in reviewing existing RNP research are the three stages during consumers’ RNP adoption process—learning about the RNP, evaluating its utility, and the resulting initial responses to RNP including cognitive/affective responses and intention to adopt or reject the product.

Method

Selection of papers on antecedents of consumer response to RNPs

The nature of our literature review is domain-based, that is, we identify, review, synthesise, and extend a body of literature in the substantive domain of RNPs across multiple marketing journals (Palmatier *et al.*, 2018). Our selection process was challenging because (1) a large variety of terms are commonly used to refer to RNPs, (2) a vast amount of research on RNPs is unrelated to our focus on consumer reactions to RNPs (e.g., strategy, ideation, etc.); and (3) the fact that there are highly relevant and even seminal studies that examine consumer responses to new products *without* explicitly referring to RNPs. Therefore, we meticulously and carefully combed the literature and consequently, we believe that despite these challenges our selection process was comprehensive and rigorous. We describe it in detail next.

Criteria for study inclusion or exclusion. We started with a relatively broad literature search of quality scholarly papers that provide strong contributions. Our additional criterion, as mentioned earlier, is that the papers were focused on consumers’ reaction to the RNP (instead of firm’s reaction, competition, etc.).

Search. We conducted a keyword search in the title “OR” abstract among papers on EBSCO (Business Sources Premier). We used two limiters in our initial search: (1) Top journals—to meet the quality criterion we included only papers published in marketing journals listed in the Financial Times 50 journal list (*Journal of Consumer Psychology*, *Journal of Consumer Research*, *Journal of Marketing*,

Journal of Marketing Research, *Marketing Science*, and the *Journal of the Academy of Marketing Science*). To that list, we added the *Journal of Product Innovation Management* due to its focus on our subject matter, really new products (RNPs). (2) We focused on the past 30 years (1989–2019) as researchers did not distinguish RNPs from INPs until the late 1980s, as reflected in the MSI research priorities.

The specific search string used the keywords “new product,” “innovation,” and “innovative product” to define the context (thereby also identifying papers in which the more specific “really” or “radically” label is present in conjunction with these keywords, but not exclusively these papers). These keywords were searched for in conjunction (“AND”) with terms such as “consumer,” “customer,” “adopter,” and “individual” to identify papers adopting a consumer-centric perspective, and in conjunction (“AND”) with terms such as “perception,” “evaluation,” “adoption,” “intention,” and “reaction” to identify papers focusing on behavioural aspects. The resulting search string, presented in Table 1 (Panel B), was used in an EBSCO search, yielding 581 papers. To this list, we manually added six papers that were not identified by our search but we consider highly relevant based on our collective expertise in the area.¹ These papers discuss concepts that were later used to directly examine consumer response to RNPs. Thus, the total number of papers identified in this stage was 587.

Screening. We then conducted a screening of all 587 papers based on the inclusion/exclusion criteria defined in Table 1. The screening was done by two of the authors. They read each abstract, skimmed the paper when needed, and independently scored each paper on a six-point rating scale (see Appendix), ranging from 0 to 5. Two criteria could award a paper the highest value (i.e., 5), which indicates the highest relevance to our focus—empirical or conceptual papers with consumers as the unit of analysis, that at least implicitly examine consumer initial reactions to RNPs. Values lower than 5 are lacking one or more of these characteristics (e.g., papers on ideation/strategy, editorials/special issue introductions, scale development papers, or consumer-centric papers with low applicability to the RNP context). The screening process was done in two rounds, with the goal of including only papers that received 5 from both authors and excluding those receiving a score lower than 5 from either author. In the first round, each author evaluated the papers independently, and this resulted in agreement on either inclusion or exclusion in 92% of the cases (540 papers). In the second round, the authors thoroughly discussed their initial judgments of the remaining 8% of the papers that received inconsistent ratings (47 papers). At the end of the process, no conflicting

¹Three of these papers are from the *Journal of Consumer Research*, two from the *International Journal of Research in Marketing*, and one from the *Journal of Experimental Psychology: Applied*.

Table 1. Process of identifying papers to be included in the literature review.

A. Inclusion and exclusion criteria		
Criterion	Inclusion	Exclusion
Study type	<ul style="list-style-type: none"> • Empirical and conceptual; peer reviewed paper 	<ul style="list-style-type: none"> • Other (e.g., book reviews, special issue introductions, ...)
Quality	<ul style="list-style-type: none"> • Papers appearing in top-tier journals in the fields of marketing and innovation management (FT50 + JPIM) 	
Date	<ul style="list-style-type: none"> • 1989–2019 	<ul style="list-style-type: none"> • All papers before 1989
Relevance	<ul style="list-style-type: none"> • Studies with explicit focus on RNPs; studies without explicit focus on RNPs but with insights deemed highly applicable for RNP context • Level of analysis: Individual consumer • Outcomes: Initial reactions (cognitive/ affective/behavioural) 	<ul style="list-style-type: none"> • Any other studies (e.g., organising for RNP success, ideation) • Level of analysis: firm- and NPD team-level practices and processes; B2B customer, employee adoption • Outcomes: long-term reactions (e.g., continued use and acceptance)
B. Search strings used		
Search string	Rationale	
(TI("new product*" OR innovation OR "innovative product*") OR AB("new product*" OR innovation OR "innovative product*"))	Determines the innovation/new product context. Also finds papers using more specific terms such as "really" "radical", "truly" in combination with these keywords (e.g., really new product)	
AND (TI(consumer OR individual OR people OR adopter OR customer) OR AB(consumer OR individual OR people OR adopter OR customer))	Sets a consumer-centric focus	
AND (TI(learn* OR react* OR respon* OR evaluat* OR perce* OR judg* OR intent* OR adopt* OR accept* OR resist* OR reject* OR prefer*) OR AB(learn* OR react* OR respon* OR evaluat* OR perce* OR judg* OR intent* OR adopt* OR accept* OR resist* OR reject* OR prefer*))	Sets a focus on behavioural aspects	
AND JN ("Journal of Marketing Research (JMR)" OR "Journal of Marketing" OR "Journal of Consumer Research" OR "Marketing Science" OR "Journal	Limits the search to top-tier journals in the marketing and innovation disciplines.	

Table 1. (Continued)

B. Search strings used	
Search String	Rationale
of the Academy of Marketing Science" OR "Journal of Product Innovation Management" OR "Journal of Consumer Psychology (John Wiley & Sons, Inc.)" OR "Journal of Consumer Psychology (Taylor & Francis Ltd)"	
Expanders: Apply equivalent subjects	
Limiters: Published Date: 1989-2019; Document Type: Paper	
INITIAL SEARCH RESULTS: 581	
MANUAL ADDITIONAL: 6 (587 in total)	

judgments remained, and 53 core papers were judged as relevant (i.e., receiving ratings of 5 from both authors; see cites in Table 2).

Extraction and synthesis

We read each paper carefully and extracted its theoretical basis/bases (e.g., categorisation, visualisation, construal level). We then grouped some bases together due to their conceptual similarity (e.g., visualisation, mental simulation, and narrative transportation were grouped). Our goal was to be exhaustive but parsimonious, and at the end of this process we grouped the 53 papers into nine clusters, seven of which represent distinct theoretical bases and two represent consumer/situational characteristics (see Fig. 1). We then went back to Hoeffler's (2003) three RNP adoption steps (or questions) and asked: Which adoption question does each cluster answer? A careful analysis of the collective findings in each cluster of papers resulted in the following classification.² The three theoretical bases that address the question "what is it?" are categorisation, analogy, and schema (in congruity, because they are related to consumer learning. The question "what of it and me?" is answered best by visualisation (which also includes mental simulation

²While it is possible that some papers may answer more than one question, we believe that the body of work in each cluster addresses our classified question predominantly.

Table 2. Papers covered in the review framework (sorted by publication year).

A: List of papers (chronological order)				
No	Year	Author(s)	Title	Journal
1	1989	Meyers-Levy & Tybout	Schema Congruity as a Basis for Product Evaluation.	JCR
2	1989	Ram	Successful Innovation Using Strategies to Reduce Consumer Resistance.	JPIM
3	1991	Ellen, Bearden, & Sharma	Resistance to Technological Innovations: An Examination of the Role of Self-Efficacy and Performance Satisfaction.	JAMS
4	1992	Fisher & Price	An Investigation into the Social Context of Early Adoption Behavior.	JCR
5	1996	Olshavsky & Spreng	An Exploratory Study of the Innovation Evaluation Process.	JPIM
6	1996	Peracchio & Tybout	The Moderating Role of Prior Knowledge in Schema-Based Product Evaluation.	JCR
7	1997	Gregan-Paxton & John	Consumer Learning by Analogy: A Model of Internal Knowledge Transfer.	JCR
8	1997	Meyers-Levy & Tybout	Context Effects at Encoding and Judgment in Consumption Settings: The Role of Cognitive Resources.	JCR
9	1999	Boyd & Mason	The Link Between Attractiveness of 'Extrabrand' Attributes and the Adoption of Innovations.	JAMS
10	2001	Gregan-Paxton	The Role of Abstract and Specific Knowledge in the Formation of Product Judgments: An Analogical Learning Perspective.	JCP
11	2001	Moreau, Lehmann, & Markman,	Entrenched Knowledge Structures and Consumer Response to New Products.	JMR
12	2001	Moreau, Markman, & Lehmann	What Is It?' Categorisation Flexibility and Consumers' Responses to Really New Products.	JCR
13	2001	Mukherjee & Hoyer	The Effect of Novel Attributes on Product Evaluation.	JCR
14	2001	Roehm & Sternthal	The Moderating Effect of Knowledge and Resources on the Persuasive Impact of Analogies.	JCR
15	2002	Wood & Lynch	Prior Knowledge and Complacency in New Product Learning.	JCR

Table 2. (Continued)

A: List of papers (chronological order)

No	Year	Author(s)	Title	Journal
16	2002	Ziamou & Ratneshwar	Promoting Consumer Adoption of High-Technology Products: Is More Information Always Better?	JCP
17	2003	Hoeffler	Measuring Preferences for Really New Products.	JMR
18	2004	Dahl & Hoeffler	Visualising the Self: Exploring the Potential Benefits and Drawbacks for New Product Evaluation.	JPIM
19	2005	Gregan-Paxton, Hoeffler, & Zhao	When Categorisation Is Ambiguous: Factors That Facilitate the Use of a Multiple Category Inference Strategy.	JCP
20	2006	Wood & Moreau	From Fear to Loathing? How Emotion Influences the Evaluation and Early Use of Innovations.	JM
21	2007	Herzenstein, Posavac, & Brakus	Adoption of New and Really New Products: The Effects of Self-Regulation Systems and Risk Salience.	JMR
22	2007	Lynch & Zauberger	Construing Consumer Decision Making.	JCP
23	2007	Zhou & Nakamoto	How do enhanced and unique features affect new product preference? The moderating role of product familiarity.	JAMS
24	2008	Alexander, Lynch, & Wang	As Time Goes By: Do Cold Feet Follow Warm Intentions for Really New Versus Incrementally New Products?	JMR
25	2008	Castaño, Suján, Kacker, & Suján	Managing Consumer Uncertainty in the Adoption of New Products: Temporal Distance and Mental Simulation.	JMR
26	2008	Feiereisen, Wong, & Broderick	Analogies and Mental Simulations in Learning for Really New Products: The Role of Visual Attention.	JPIM
27	2010	Reinders, Frambach, & Schoormans	Using Product Bundling to Facilitate the Adoption Process of Radical Innovations.	JPIM
28	2011	Noseworthy & Goode	Contrasting rule-based and similarity-based category learning: The effects of mood and prior knowledge on ambiguous categorisation	JCP
29	2011	Noseworthy & Trudel	Looks Interesting, but What Does It Do?? Evaluation of Incongruent Product Form Depends on Positioning.	JMR

(Continued)

Table 2. (Continued)

A: List of papers (chronological order)				
No	Year	Author(s)	Title	Journal
30	2012	Jhang, Grant, & Campbell	Get It?? Got It. Good! Enhancing New Product Acceptance by Facilitating Resolution of Extreme Incongruity.	JMR
31	2012	Zhao, Hoeffler, & Dahl	Imagination Difficulty and New Product Evaluation.	JPIM
32	2012	Ziamou, Gould, & Venkatesh	Am I Getting It or Not?' The Practices Involved in 'Trying to Consume' a New Technology.	JPIM
33	2013	Feiereisen, Wong, & Broderick	Is a Picture Always Worth a Thousand Words? The Impact of Presentation Formats in Consumers' Early Evaluations of Really New Products (RNPs).	JPIM
34	2014	Ma, Yang, & Mourali	Consumer Adoption of New Products: Independent Versus Interdependent Self-Perspectives.	JM
35	2014	Noseworthy, Di Muro, & Murray	The Role of Arousal in Congruity-Based Product Evaluation.	JCR
36	2014	Talke & Heidenreich	How to Overcome Pro-Change Bias: Incorporating Passive and Active Innovation Resistance in Innovation Decision Models.	JPIM
37	2014	Zhao, Dahl, & Hoeffler	Optimal Visualisation Aids and Temporal Framing for New Products.	JCR
38	2015	Claudy, Garcia, & O'Driscoll	Consumer resistance to innovation-a behavioral reasoning perspective.	JAMS
39	2015	Heidenreich & Handrich	What about Passive Innovation Resistance? Investigating Adoption-Related Behavior from a Resistance Perspective.	JPIM
40	2015	Kuester, Feurer, Schuhmacher, & Reinartz	Comparing the incomparable? How consumers judge the price fairness of new products.	IJRM
41	2015	Ma, Gill, & Jiang	Core Versus Peripheral Innovations: The Effect of Innovation Locus on Consumer Adoption of New Products.	JMR
42	2015	Moldovan, Steinhart, & Ofen	"Share and scare": Solving the communication dilemma of early adopters with a high need for uniqueness.	JCP
43	2016	Heidenreich & Kraemer	Innovations—Doomed to Fail? Investigating Strategies to Overcome Passive Innovation Resistance.	JPIM

Table 2. (Continued)

A: List of papers (chronological order)				
No	Year	Author(s)	Title	Journal
44	2016	Herzenstein & Hoeffler	Of clouds and zombies: How and when analogical learning improves evaluations of really new products.	JCP
45	2016	Luo, Wong, & Chou	The role of product newness in activating consumer regulatory goals.	IJRM
46	2017	Faraji-Rad, Melumad, & Johar	Consumer desire for control as a barrier to new product adoption.	JCP
47	2017	Morvinski, Amir, & Muller	Ten Million Readers Can't Be Wrong!,' or Can They? On the Role of Information About Adoption Stock in New Product Trial.	MarSc
48	2017	Müller-Stewens, Schlager, Häubl, & Herrmann	Gamified Information Presentation and Consumer Adoption of Product Innovations.	JM
49	2018	Nielsen, Escalas, & Hoeffler	Mental Simulation and Category Knowledge Affect Really New Product Evaluation Through Transportation.	JoEP: Applied
50	2018	Noseworthy, Murray, & Muro	When Two Wrongs Make a Right: Using Conjunctive Enablers to Enhance Evaluations for Extremely Incongruent New Products.	JCR
51	2018	Schuhmacher, Kuester, & Hultink,	Appetizer or Main Course: Early Market vs. Majority Market Go-to- Market Strategies for Radical Innovations.	JPIM
52	2018	Xiao, Zhang, & Cervone,	Social Functions of Anger: A Competitive Mediation Model of New Product Reviews.	JPIM
53	2019	Wang, Noble, Dahl, & Park	Successfully Communicating a Cocreated Innovation.	JM
B. Journals included in the review framework				
Journal				No of papers
<i>Journal of Product Innovation Management (JPIM)</i>				13
<i>Journal of Consumer Research (JCR)</i>				12
<i>Journal of Consumer Psychology (JCP)</i>				8
<i>Journal of Marketing Research (JMR)</i>				8
<i>Journal of the Academy of Marketing Science (JAMS)</i>				4
<i>Journal of Marketing (JM)</i>				4
<i>International Journal of Research in Marketing (IJRM)</i>				2
<i>Journal of Experimental Psychology: Applied</i>				1
<i>Marketing Science</i>				1

and narrative transportation), construal level, and learning cost, because these four theoretical bases are related to judgment and evaluation which ultimately lead to consumer initial responses to RNP. Since uncertainty plays a central role in the entire RNP adoption decision process, we discuss this important theoretical base separately.

Next, we identified papers whose results may moderate the process described above. These moderators broadly fall into two clusters: (a) *consumer-specific variables*: consumer innovativeness tendencies, expertise, regulatory focus, self-construal, and personal processing characteristics. These moderators affect how consumers learn about and evaluate the RNP, and how they deal with the uncertainty surrounding these stages. (b) *situation-specific variables* such as the competitive landscape, social influence, and firm's RNP launch strategy (e.g., segmentation, targeting, positioning, marketing mix).

We begin and end our review by discussing uncertainty. We first examine its importance as a major roadblock to adoption and then offer insights based on the aforementioned theoretical bases on how to mitigate uncertainty by facilitating consumer learning and enhancing evaluation of the RNP.

Results

Uncertainty is everywhere

Uncertainty surrounds the entire RNP adoption decision process because consumers must learn about and evaluate the benefits and drawbacks of a RNP without fully understanding them and/or their probabilities³ (Knight, 1921; Volz and Gigerenzer, 2012). In this sense, RNPs are different from INPs because consumers do not experience the same level of uncertainty when evaluating the latter (Hoeffler, 2003). Consequently, uncertainty is the focus of several influential papers in the RNP domain.

Hoeffler (2003) argues that RNPs have greater benefits than INPs, but consumers also have greater uncertainty estimating the usefulness of RNPs than INPs because they lack a frame of reference for RNPs. This work further argues that uncertainty may be partly resolved by using sense-making procedures, such as analogies and mental simulation. Informed by Ram (1989), Hoeffler (2003) differentiates between several benefit- and cost-related dimensions of uncertainty, each of which pertains to specific attributes of the RNP. As Castaño *et al.* (2008) further

³Early work on consumer adoption barriers (e.g., Ram, 1989) identified "risk" as a major hurdle in the adoption decision process. However, as Volz and Gigerenzer (2012) point out, uncertainty is somewhat different from risk where all possible outcomes and their probabilities are, or can be, known. Yet, in the literature we reviewed, authors often use the terms risk and uncertainty interchangeably.

elaborate, key RNP uncertainties are performance uncertainty (e.g., how useful the RNP will be), symbolic uncertainty (e.g., how socially desirable and appropriate the RNP will be), learning cost uncertainty (e.g., how difficult switching from the current product to the RNP will be), and effective uncertainty (e.g., how adopting a RNP will make consumers feel). The key insight from this work is that perceived uncertainties can lead consumers to discount RNPs' novel benefits, which ultimately impacts adoption. Indeed, Ram (1989) suggests that perceived uncertainty is unfavourable and needs to be reduced by firms' launch activities, such as communication, to overcome resistance. Despite the presence of this uncertainty, consumers need to learn about and evaluate the RNP to make an adoption decision. We elaborate on these learning and evaluation steps next. Specifically, for each step we present the relevant theoretical bases in detail, by defining them, discussing the insights from the papers we identified, and finally extracting the overarching insights across all papers in each base with 14 recommendations for managers of RNPs.

What Is It? Learning about the RNP

In this section, we bring insights that can be turned into strategies aimed at mitigating the uncertainty surrounding consumer understanding of what the RNP does. Note that at the conclusion of our synthesis of each theoretical base we provide managerial recommendations that are derived from our synthesis of the literature. This synthesis often identifies contradictory findings and potential trade-offs that loom within specific managerial decisions. Where it is appropriate, we highlight these trade-offs in our managerial recommendations.

Categorisation. In an exploratory study on the consumer innovation evaluation process, Olshavsky and Spreng (1996) note that "when presented with an innovative concept, consumers first attempt to categorise the product" (p. 512). In our scenario involving RNPs, consumers often find it difficult to attach a category label to a RNP. Consequently, consumers must arduously construct new knowledge structures rather than change existing ones (Moreau *et al.*, 2001b). Notably, Olshavsky and Spreng (1996) propose that affect plays a major role in the categorisation process. They suggest that the affect associated with the category during the evaluation of the RNP can terminate the evaluation process, such that positive (negative) affect leads to acceptance (rejection) of the RNP. They used the example of 'sugar-coated medicines' as an innovation that was immediately rejected by consumers due to the negative affect associated with medicines.

The literature on categorisation-based knowledge transfer argues that, "when a novel item is classified as a member of an existing category, information in that category is transferred to the novel item and used to structure the new representation"

(Moreau *et al.*, 2001b). Thus, knowledge transfer is seen as a by-product of the way in which consumers organise knowledge (Gregan-Paxton and John, 1997). The question is then, from which domain(s) do consumers transfer knowledge to understand a RNP? Moreau *et al.* (2001b) are the first to examine this issue in the context of RNPs. The authors illuminate the process by which consumers may draw information from more than one domain to categorise a RNP such as a digital camera. Their results suggest that consumers are able, yet typically unwilling, to draw information from multiple categories unless significant contextual support is provided. Rather, “the first plausible category label provided to the consumer significantly influences their categorisations, expectations, and preferences” (p. 489).

However, managers responsible for the launch of a RNP may have reasons to avoid providing a clear category label. This may especially be the case for “hybrid” or “convergent” RNPs which result from a combination of features and functionality of two or more existing products (Noseworthy and Goode, 2011). Gregan-Paxton *et al.* (2005) extend Moreau *et al.* (2001b) work to situations in which communication for a RNP includes two category cues and find that the incidence of multiple-category (vs. single-category) inferencing is a function of the nature of the category cue (perceptual vs. conceptual) and the relative familiarity of the categories.

Situation- and consumer-specific factors also play a role in the categorisation process for RNPs. For instance, Meyers-Levy and Tybout (1997) examine whether categorisation in response to a product launch advertisement is affected by the programming context. The authors consider two potential context effects, assimilation (when product judgments are biased toward the affect evoked by context) or contrast (when product judgments are adjusted away from the affect evoked by context). The results suggest that whether assimilation or contrast occurs depends on consumers’ cognitive resources available during categorisation. Importantly, the availability of excess cognitive resources is typically low for RNPs because the categorisation itself requires substantial resources. Note that the required cognitive resources during categorisation can be managed by means of the positioning strategy. Meyers-Levy and Tybout’s (1997) work also suggests that overall RNP evaluations are least likely to be impacted for consumers with a low need for cognition as these consumers “perceive alternative, context-independent sources of information to require less effort and to be sufficiently diagnostic of their personal reactions to the product” (p. 11). Last, Noseworthy and Goode (2011) examine how consumers integrate information from multiple categories. Their research adopts a dual systems view, arguing that an explicit and an implicit mental system compete

in category learning. The explicit system is suitable for learning categories for which a single rule can be easily verbalised to classify its members.

Taken together, existing research identifies one major problem that can occur if consumers attempt to place the RNP in an existing category. That is, novel benefits may be overlooked (or discounted) because they are not usually associated with the existing category. This insight can be extremely useful to companies communicating RNPs as they need to be cognizant of the predominant categorisation scheme likely to be used by consumers. We note below the interesting trade-off that is identified via our synthesis of the RNP categorisation literature. While positioning a RNP as a creator of a new category can enhance its perceived uniqueness, this may come at the cost of making the perceived learning costs higher for prospective consumers.

R1a: Categorising a RNP into a radically new category (that might not be the most obvious one) increases perceived dissimilarity to the existing product category and thus increases the perceived uniqueness of the RNP.

R1b: Managers seeking to position a RNP as creating an entirely new category by highlighting the incomparability of the product's functions to existing categories should understand that this may make the learning process more difficult for consumers.

Analogy. Advocates of using analogical learning as the preferred theoretical basis for learning about RNPs argue that, in many cases, RNPs are so new and distinct that closely related product categories from which knowledge could potentially be transferred do not yet exist at the time of launch and, hence, category-based learning is not feasible. In this case, analogies are a useful tool for transferring internal knowledge from an established product domain ("base") to an entirely novel domain ("target") that consumers can apply and managers may utilise (Gregan-Paxton and John, 1997; Roehm and Sternthal, 2001).

Gregan-Paxton and John (1997) are the first to suggest the applicability of analogical learning theory to help consumers learn about RNPs. In their seminal paper, they present a model of internal knowledge transfer that illuminates how consumers notice the relevance for an established base of knowledge for the novel domain ("access"), align the two domains ("mapping"), transfer knowledge from the base to the target (the actual learning), and finally induce a schema, that is, an abstract knowledge structure that may serve as a base for future analogical learning. Notably, the mapping can be based on attributes or relations, the latter of which is most likely to occur in the case of RNPs.

Importantly, effective analogical learning does not occur if mistakes happen in the process, such as consumers selecting (or managers offering) an inappropriate

base. As such, research on analogies identifies boundary conditions for effective learning by analogy to occur. Gregan-Paxton and John (1997) argue that base domain experts (novices) are more (less) likely to perceive common relations between the base domain and the RNP target. Roehm and Sternthal (2001) examine the role of expertise and additional factors (e.g., cognitive resources' availability and positive mood).

More recent research investigates how different forms of analogies (e.g., proximal vs. distant; verbal vs. visual; implicit vs. explicit) are effective under different circumstances (Feiereisen *et al.*, 2008; 2013; Herzenstein and Hoeffler, 2016). Herzenstein and Hoeffler (2016) show that when consumers are able to understand an analogy between the RNP and the base domain themselves, they experience positive emotions, which then translate to higher RNP evaluations. In these situations, consumers prefer to get less information on the analogy. In fact, more information will hinder the persuasive impact of the analogy.

In sum, analogies, under certain conditions, can facilitate consumer learning of the RNPs and yet, in other instances, hinder learning and evaluations. Thus, managers who are facile on the trade-offs associated with these important factors should be able to use analogies effectively to help consumers learn about RNPs (and their novel benefits). Particular attention should be paid to the selection of a base domain and the degree to which the analogy is described to potential consumers.

R2a: To aid consumers in learning about a RNP, managers can relate the product to a relevant base domain by using an analogy. The more conceptually distant the base domain is from the RNP, the more the analogy needs to be fully described.

R2b: To effectively use analogies to enhance consumer learning about RNPs, managers need to avoid the pitfalls that have been identified (e.g., using the inappropriate domain, requiring excessive consumer processing).

Schema (in)congruity. This literature stream examines how the extent to which a product is or is not congruent with its activated product schema influences learning and evaluation. Mandler (1982) was the first to theorise that individuals' affective response to an object as a function of the level of schema congruity has an inverted U shape. The effect is caused by the arousal and cognitive effort individuals experience when trying to resolve the perceived incongruity. A highly congruent object evokes very little arousal and cognitive elaboration, while individuals may experience the resolution of extreme incongruity as overwhelming and frustrating. A moderate level of incongruity, then, is one that can be resolved "without prompting a fundamental change in the consumer's existing cognitive structure" (Meyers-Levy and Tybout, 1989, p. 40), a process which is seen as rewarding in itself,

which leads to a relatively positive response (Mandler, 1982). Hence, physiological negative (e.g., anxiety) or positive (e.g., curiosity) responses to incongruity underlie the evaluation of RNPs (Noseworthy *et al.*, 2014). Consequently, moderate incongruity may be most favourable in terms of objective evaluation.

Meyers-Levy and Tybout (1989) are the first to test these propositions in a new product context. Jhang *et al.* (2012) propose a similar conceptualisation that characterises levels of incongruity in terms of links to shared associations through which incongruity can be resolved. RNPs that offer an extremely incongruent attribute completely lack links to shared associations with the category to which it belongs. Noseworthy and Trudel (2011) propose to differentiate between perceptual and conceptual incongruity to account for innovations that are incongruent to normative expectations in terms of form or function, respectively. Conceptual incongruity is often associated with categorisation ambiguity if the novel function is adopted from another product category.

Extant research drawing on (in) congruity as a theoretical base also identifies several moderating effects for the relationship between the level of incongruity and product evaluation. With regard to consumer-specific moderators, the inverted U-shaped function as discussed above occurs most likely when consumer knowledge about the product category is limited (Peracchio and Tybout, 1996). Noseworthy and Trudel (2011) stress the importance of positioning along functional vs. experiential dimensions when the product form is incongruent with consumers' normative expectations. Jhang *et al.* (2012) examine different manipulations of cognitive flexibility as a means to resolve extreme incongruity, and Ma *et al.* (2015) propose to offer the RNP in a peripheral (vs. core) locus. Noseworthy *et al.* (2014) highlight the role of arousal for the extent to which the underlying positive and negative emotions of schema (in)congruity drive RNP evaluations.

In many cases, RNPs are extremely incongruent with the activated schema, and as Meyers-Levy and Tybout (1989) note, resolving extreme incongruity requires complex strategies because "there is no ready associative pathway to traverse" (p. 42). Thus, managers responsible for the launch of RNPs may take measures that facilitate the resolution of extreme incongruity to help consumers learn (Jhang *et al.* 2012). A good example is provided by Ma *et al.* (2015) who demonstrate the advantage of offering a RNP as a detachable peripheral component (e.g., video console with accessory offering mind-control functionality) rather than integrating the same innovation into the product's core (e.g., video console with built-in mind-control functionality). Marketers can also incorporate "enablers" (e.g., the colour green to make sense of a semantically related feature such as vitamin enriched) in their product design to help resolve extreme incongruity (Noseworthy *et al.*, 2018).

R3: Managers seeking to position a RNP as a creator of a new category should help consumers resolve perceived extreme incongruity by offering the RNP with a familiar design, or by offering novel aspects of the RNP as physically separate components.

What of it and me? Evaluating the RNP's utility

In this stage, consumers evaluate the expected RNP's utility. To do so, they consider reasons for and against adoption. While most research highlights the reasons for adoption as key, some authors argue that examining reasons for active rejection has not received the attention it deserves (Claudy *et al.*, 2015; Talke and Heidenreich, 2014).

Visualisation, mental simulation, and narrative transportation. A major hurdle for the adoption of RNPs are the difficulties consumers have evaluating RNP's benefits and usage process (Heidenreich and Kraemer, 2016; Hoeffler, 2003). Hence, managers need to draw consumers' attention to the novel functions of the RNP and demonstrate the benefits associated with the new functions. One tool to achieve this is by means of mental simulation, whether spontaneous or directed (Nielsen *et al.*, 2018). Mental simulation, or mental imagery, is defined as an imitative mental representation of events (Taylor *et al.*, 1989). The idea is that mental simulation enables consumers to evoke relevant personal experiences and more effectively align the RNP with patterns of usage (Taylor *et al.*, 1998). A similar concept is visualisation or "thinking in pictures" (Dahl and Hoeffler 2004, p. 260) which MacInnis and Price (1987) define as a process by which sensory information is represented in working memory. However, consumers may find it difficult to imagine how they are going to use a new product. Indeed, recent research finds that imagination difficulty decreases evaluation of RNPs (but not INPs) because consumers perceive imagination difficulty as diagnostic in their RNP assessment (Zhao *et al.*, 2012), however when the process is easy, imagination-based simulation is more effective than simulation based on a memory because consumers are more involved while using imagination (Zhao *et al.*, 2009).

Dahl and Hoeffler (2004) examine the favourability of self-related versus other-related images for the evaluation of RNPs versus INPs and find that consumers' evaluation of a RNP (INP) is higher if they imagine a typical consumer (themselves) using the new product. Based on Taylor *et al.* (1998), Castaño *et al.* (2008) distinguish between outcome and process simulation which they characterise as "why-thinking" and "how-thinking," respectively. As such, the two modes of mental simulation can reduce different kinds of uncertainties that

relate to adoption constraints (in the case of process simulation) and potential gains from adoption (in the case of outcome simulation). Zhao *et al.* (2014) further show that concrete (abstract) visualisations are more effective for understanding the RNP when the visualisation is based on past (future) consumption scenarios.

Affect also plays a role in the effectiveness of mental simulation. Castaño *et al.* (2008) start with the assumption that uncertainty drives emotions that can be positive (e.g., hope, optimism) or negative (e.g., anxiety, fear) and suggest that outcome (vs. process) simulations interact with temporal distance to promote positive and assuage negative emotions. Zhao *et al.* (2011) find that mental simulation needs to account for whether the consumers' information-processing mode is cognitive or affective to enhance RNP evaluations. They show that mental simulations can be framed such that they shift consumers' focus away from the usage process and toward recognising the benefits of a RNP.

Narrative transportation is related to mental simulation and visualisation but involves more depth. van den Hende and Schoormans (2012, p. 655) define narrative transportation as "...a mixture of attention, imagery, and feelings that people experience when they watch a movie or read a narrative." Being transported means that consumers are immersed in what they are watching or reading and have vivid images in their minds, they see themselves in the action while forgetting about the world around them. Being transported also leads to enhanced emotions.

Nielsen *et al.* (2018) find that consumers spontaneously generate mental simulations in an attempt to assess the value of RNPs. When these self-generated simulations were in the form of sufficiently engrossing and vivid narratives, they evoked transportation, which led to a higher evaluation of the RNPs. Further, consumers with extensive experience in a related product category were more likely to be transported during the evaluation. As such, narrative transportation has emerged as a useful and interesting theoretical lens for understanding how consumers resolve uncertainty when evaluating a RNP.

R4a: Having consumers engage in simulated usage of a RNP should enhance the accuracy of concept tests and other marketing research techniques (i.e., allow better forecasting).

R4b: Managers should facilitate the ease of simulation as consumers evaluate the RNP more (less) useful when simulating usage is easy (difficult).

R4c: Managers can transport consumers into a story line about a RNP to facilitate consumers' understanding of the RNP and increase their evaluations.

Construal level. Changes in perspective over time are the focus of construal level theory which links psychological distance to the level of construal (Eyal et al., 2008; Trope and Liberman, 2003). In the context of RNPs, effects of temporal distance are of heightened importance. Specifically, consumers may provide input during new product development or may be exposed to preannouncements when the time of launch is still temporally distant. The problem is that this distance shifts the evaluation of the RNP closer to the value that is reflected in abstract, high-level considerations or “why” aspects of the desirability of adopting it, rather than to the value that is reflected in concrete, low-level considerations or “how” aspects of the RNP’s feasibility (Alexander et al., 2008). Yet, at the time of launch, this shift is reversed. As a result, consumers are likely to “talk the talk” about buying the new product but will not “walk the walk” when it is actually launched, and this effect is more pronounced for RNPs than for INPs (Alexander et al., 2008). Extant research drawing on construal level as a theoretical base emphasises the importance of creating a match between consumers’ temporal perspective and measures of communication in their joint effect on RNP evaluations (Castaño et al., 2008; Zhao et al., 2014). This literature stream highlights how complex underlying psychological processes influence adoption decisions, leading to an alteration of consumer preferences at the time of adoption decisions compared with the preferences expressed previously. For instance, preannouncement communication for autonomous vehicles should highlight abstract benefits such as comfort, freedom, and the riding experience. Shortly before launch, communications should highlight more concrete aspects such as relating to safety and affordability.

R5a: Communications of a RNP should change from more abstract to more concrete as the product launch is nearing to match the construal level that will naturally be evoked by potential consumers.

R5b: Managers communicating the benefits of a RNP for future usage should refrain from providing detailed visualisation aids because consumers’ natural construal level for the future is abstract.

Learning cost. The term learning cost is different from the term “learning” cited previously (i.e., the learning about a RNP stage). Learning cost refers to the cognitive effort that consumers expend to accumulate knowledge for effective usage (Mukherjee and Hoyer, 2001), and more learning is required to understand a RNP than an INP (Hoeffler, 2003). Against this backdrop, consumers with a high perceived ability to use a RNP successfully (i.e., self-efficacy) should be less likely to resist RNP adoption (Ellen et al., 1991).

Unfortunately, consumers often focus on the learning costs associated with using the RNP effectively and pay less attention to its unique benefits (Zhao et al., 2011).

As such, learning costs may increase uncertainty (Castaño *et al.*, 2008; Hoeffler, 2003) and trigger negative feelings (e.g., frustration) as well as perceived lack of control if the benefits derived from learning are not highlighted (Mukherjee and Hoyer, 2001; Wood and Moreau, 2006).

R6: Managers should reduce learning cost inferences that may occur as consumers evaluate RNPs by closely linking efforts to learn about using the product with the novel benefits afforded by the RNP.

The role of consumer-specific variables

The research we present next suggests that certain consumer-specific variables can be important and provide effective segmentation bases for RNP evaluation and adoption.

Consumer innovativeness tendencies. A key contribution of diffusion research is that some consumers, in general, adopt new products earlier than others (Rogers, 2003). Rogers and Shoemaker (1971) term this phenomenon consumer innovativeness. In line with Rogers' well-known adopter categories, extant research treats consumer innovativeness as a latent construct spanning from high to low (Goldsmith and Hofacker, 1991; Midgley and Dowling, 1978).

Rogers (2003) documents that individuals with high consumer innovativeness are more capable when dealing with the uncertainty surrounding RNPs than individuals low in consumer innovativeness. This suggests that consumer innovativeness is an important segmentation criterion. Indeed, consumer innovativeness affects perceptions of other aspects of the RNP as Kuester *et al.* (2015) show. These authors examine the effect of a RNP's high (vs. low) launch price on perceptions of price fairness and find that a negative effect exists for low, but not high levels of consumer innovativeness. Schuhmacher *et al.* (2018) demonstrate that consumers high in innovativeness should be targeted by signalling exclusive innovativeness or originality, and the authors identify message content (feature-based), distribution intensity (exclusive), and launch price (very high) as appropriate instruments to achieve this. However, if the RNP is targeting a mass market with its introduction, these consumers are usually low on innovativeness and therefore marketers should signal security. Boyd and Mason (1999) demonstrate that the perceived general attractiveness of the RNP product category by the majority of consumers, positively influences RNP evaluations. Here, product category attractiveness relates to an evaluation of specific market suppliers made prior to the evaluation of a RNP's utility. This work suggests that an attractive category assessment is crucial for a rapid diffusion into less-innovative consumer groups. But these findings may represent upper bounds for evaluation and

adoption, as Heidenreich and his colleagues suggest (Heidenreich and Handrich, 2015; Heidenreich and Kraemer, 2016; Talke and Heidenreich, 2014)—there is an “adopting” bias in research whereas people’s general inclination is to resist innovations (ALAs passively).

R7: Managers should adjust launch tactics based on the consumer innovativeness level of specific target segments to optimise consumer learning and evaluations.

Expertise. An important correlate of consumer innovativeness is expertise (for an extensive review on the correlates of consumer innovativeness, see Bartels and Reinders, 2011). Extant research provides strong evidence that expertise plays a crucial role in consumer learning about RNPs. Expertise can be described as a function of the amount of domain-specific knowledge acquired through experience or training (Wood and Lynch, 2002). Prior research uses a number of alternative conceptualisations and definitions such as prior knowledge (Wood and Lynch, 2002) and experience (Zhou and Nakamoto, 2007). Although these constructs may differ in their role in information processing, they are usually highly correlated (for a brief discussion see (Moreau *et al.*, 2001a) and going forward we do not differentiate between them.

Veryzer (1998), one of the first authors to explicitly examine key factors affecting consumer evaluation of RNPs, reports on research efforts and findings of seven firms and notes that “quite often customers had no experience with the technologies underlying these products and thus they had little or no frame of reference for understanding them” (p. 143). Gregan-Paxton *et al.* (2002) provide an excellent example to illustrate how the existence of a frame of reference depends on consumer expertise: “Like a novice viewing an X-ray, when a consumer first encounters a RNP, he or she must process the novel stimulus in the absence of a framework explicitly designed for organising incoming information about that stimulus” (p. 536). Experts not only possess more knowledge than novices about the base category, but the rich relational information contained in their representations allows them to effectively recognise and organise RNP information (Roehm and Sternthal, 2001). This explains why analogies, for example, are considered more effective when consumers have substantial knowledge about the base domain.

Intriguingly, expertise can also be detrimental to the adoption of RNPs. Moreau *et al.* (2001a) argue that experts are better able than novices to recognise a lack of understanding for a RNP which leads to a decrease in comprehension and perceived net benefits. In a similar vein, Wood and Lynch (2002) argue that high levels of expertise with the base is often accompanied by overconfidence, motivational deficits, and a “feeling of knowing” that ultimately hinders experts’ ability to learn about and fully appreciate a RNP’s benefits.

Expertise moderates the effect of the level of perceived incongruity on product evaluations such that consumers high in expertise tend to view enhanced features as congruent and unique ones as moderately incongruent while their low expertise counterparts likely view enhanced features as moderately incongruent and unique features as extremely incongruent (Zhou and Nakamoto, 2007). Expertise also plays a role in affective responses during learning about RNPs as the level of expertise interacts with RNP information provided by the supplier in the disconfirmation of complexity expectations (Wood and Moreau, 2006). Similarly, recent research suggests that a communication strategy that creates a mismatch between authentic creation narratives and traditional persuasive messages for (co-created) RNPs might require novices rather than experts as the target group. Furthermore, Zhao *et al.* (2012) note that for RNPs that constitute a new product category, expertise in the domain of the RNP is by definition lower than it is for INPs, making consumers evaluating RNPs (INPs) more (less) likely to use contextual factors as diagnostic cues in the formation of judgment. Finally, the success of launch tactics such as bundling the RNP together with a familiar product is most effective for novices (Reinders *et al.*, 2010).

R8: Managers should take special measures to inform consumers with greater expertise in a related product category on the unique novelty of a RNP. Surprisingly, novices are likely to realise the RNP's novelty more than experts.

Regulatory focus. Herzstein *et al.* (2007) are the first to apply regulatory focus theory to RNPs. This theory posits the presence of two self-regulation systems, the promotion system and the prevention system. The former system is derived from nurturance needs such as advancement and growth, and uses approach strategies when regulating toward desirable ends. The latter system is derived from security needs and uses avoidance strategies when regulating away from undesirable ends. The authors theorise and find that self-regulation affects the adoption of RNPs because consumers weigh the needs satisfied by a new product against its costs differently, depending on their regulatory focus. Further, they put forth the notion that the newness of the RNPs leads consumers to believe that there is inherent risk associated with RNPs—and that uncertainty perceptions may vary as a function of regulatory focus. Consumers with a chronic disposition to be promotion-focused own more new high-technology products than prevention-focused consumers. As such, regulatory focus may be an effective basis for segmentation (Herzstein *et al.*, 2007), but caution is advised because exposure to an ad for a RNP could trigger a prevention goal, whereas exposure to an ad for an INP produces a promotion goal (Luo *et al.*, 2016). These authors advise RNP marketers to frame product benefits “in terms of negative

outcomes avoided by adopting the products,” as such framing would be appropriate to align with the prevention-focused induced by these innovations.

R9: Managers should attempt to create a promotion-focused mind-set in consumers by highlighting what a RNP allows them to accomplish.

Self-construal. According to self-construal theory, there are two distinct perspectives that individuals have about their own self in relation to others: the independent self-construal and the interdependent self-construal (Markus and Kitayama, 1991). Consumers who adopt an independent self-perspective view the self as autonomous and separate from others, while consumers adopting an interdependent-self perspective view the self as connected with others. Similar to an individual’s regulatory focus, circumstances may activate one’s self-construal (Aaker and Lee, 2001). In a RNP context, Ma *et al.* (2014) combine self-construal theory with optimal distinctiveness theory (Brewer, 1991). Optimal distinctiveness theory argues that two competing needs drive the quest for social identity: the need to differentiate oneself from others and the countervailing need to assimilate oneself with others. Ma *et al.* (2014) provide evidence that the effect of self-construal on new product adoption is contingent on the newness of the product, such that consumers with an independent (interdependent) perspective are more willing to adopt RNPs (INPs). Indeed, their results suggest that the effect is driven by the perceived fit between the product’s newness level and the optimal level of distinctiveness desired by consumers.

R10a: Managers should position a RNP with an independent self-perspective that highlights the uniqueness of consumers who adopt the RNP.

R10b: If RNP consumption is unsatisfactory, consumers from independent cultures will evaluate the RNP more negatively (than consumers from interdependent cultures).

Personal processing characteristics. Consumers differ in their innate motives and needs in many ways. We briefly summarise three constructs related with personal processing that have or may have great relevance to the adoption process of RNPs: need for cognition, need for uniqueness, and need for control. Need for cognition is a personality trait reflecting the extent to which individuals intrinsically enjoy thinking (Haugtvedt *et al.*, 1992). As mentioned earlier, the need for cognition plays a role in context effects on categorisation (Meyers-Levy and Tybout, 1997). Need for uniqueness is a “positive striving for abnormality relative to other people” (Snyder and Fromkin 1977, p. 518) which is a correlate of consumer innovativeness (Bartels and Reinders, 2011). Prior research demonstrates that early

adopters will discourage others from adopting the RNP in order to preserve their distinctiveness, thereby affecting other people's RNP adoption decision process (Moldovan *et al.*, 2015).

Recently, the role of consumers' desire for control on new product adoption was examined (Faraji-Rad *et al.*, 2017). The authors define desire for control as an innate motive or need to personally exert control over one's surrounding environment and produce desired results. They find that a high desire for control represents a barrier to adoption for new versus established products. Taking this research into account, a control-increasing frame can be used to increase evaluation and acceptance of the new product for consumers with a high desire for control. It is plausible to argue that similar results would occur for RNPs (vs. INPs), especially those that provide functions that automate tasks previously carried out by consumers (Leung *et al.*, 2018), such as autonomous cars which may be especially control-threatening for some consumers.

R11: Marketers should use creative launch ads to induce higher need for cognition, reduce need for uniqueness in post-adoption consumers, or frame their product as control-increasing to help with adoption.

The role of situation-specific variables

Positioning in the competitive landscape. As noted before, existing alternatives might determine the categories from which consumers transfer knowledge when learning about the RNP. In the evaluation stage, existing alternatives determine consumers' status quo against which a RNP's utility can be judged (e.g., learning cost). For instance, the more people are satisfied with their existing behaviour or habits, the higher should be their resistance to a RNP (Ellen *et al.*, 1991; Ram, 1989). However, this should not necessarily discourage the development of RNPs, but rather help in their positioning (for example, not many people were unhappy with their doorbells or thought it is a product that needs to be completely renovated, and yet Ring doorbell-camera has been immensely successful due to its smart positioning). This competitive positioning analysis is best done before the RNP is developed, however, if it has not been, it should still be done to communicate the RNP's utility and design other aspects of marketing strategy.

R12: Managers should estimate the utility derived from consumers' existing alternatives when estimating the usefulness of RNPs and marketing the RNPs.

Social influence. The literature on new product diffusion acknowledges the role of social influence as a central driver. For instance, in his famous work, Bass (1969)

differentiates innovators from imitators, and defines the latter as those consumers that “are influenced in the timing of adoption by the decisions of other members of the social system” (p. 216). Against this backdrop, social influence should also affect individual RNP adoption behaviour.

Indeed, Fisher and Price (1992) demonstrate that superordinate group influence affects the importance of visibility of consumption for early adopters seeking social approval. More recent research indicates that role of social influence might even be more pronounced in a RNP context (Xiao *et al.*, 2018). As confirmed by anecdotal evidence, social influence and visibility of consumption can negatively influence adoption, which was arguably one reason for the failure of the Google Glass (“the creep factor”; Wartzman, 2013).⁴ It can also positively influence adoption, as people like to see “blue” messages when texting with others.⁵

Moreover, consumers low in innovativeness might be influenced by those who have already adopted the RNP such that the early adopters’ uniqueness is preserved (Moldovan *et al.*, 2015). For instance, negative online RNP reviews might stop other consumers from adopting the RNP (Xiao *et al.*, 2018). Morvinski *et al.* (2017) examine the effect of adoption stock (“Ten Million Readers Can’t Be Wrong!”) and homophily (the tendency to act like similar others) on subsequent adoption. In high uncertainty situations, which is typically the case for RNPs, they find the effect to be null or even negative in low-homophily situations.

R13: Managers should design RNP adoption process with an eye towards the impact of social influence and the nuanced responses that may occur.

Firm’s overarching RNP launch strategy and tactics. Beyond research with a consumer focus, the management-oriented innovation literature suggests that firms’ overall strategy and their overarching RNP entry strategy (e.g., skimming vs. penetration strategy) should influence the adoption decision process of consumers (Montaguti *et al.*, 2002). While most of the research we discussed points to the effectiveness of specific launch tactics, recent research also considers firms’ RNP launch strategies and tactics explicitly. For instance, Kuester *et al.* (2015) manipulate product newness (RNP vs. INP) and launch price, and demonstrate that the negative effect of a high (vs. low) launch price on perceived price fairness is less pronounced for RNPs, suggesting acceptance of higher prices in the case of RNPs. Further, Schuhmacher *et al.* (2018) examine how multiple aspects of

⁴<https://www.forbes.com/sites/drucker/2013/05/21/drucker-wear-google-glass/#fd6c19974514>.

⁵<https://www.wsj.com/articles/ugh-green-bubbles-apples-imessage-makes-switching-to-android-hard-1539867600>.

the go-to-market strategy (message content, launch price, distribution intensity) should be aligned with consumer innovativeness to bolster adoption intentions.

Reinders *et al.* (2010) examine the effectiveness of bundling a RNP together with a familiar product on RNP adoption and demonstrate the importance of perceived fit between the two products. In case of bundling, the two products should be highly fitting as bundling with moderate fit reduces focal outcomes (RNP comprehension, evaluation, and adoption intention) compared with no bundling or bundling with high fit. The results also show that bundling with high fit increases outcomes for novices with little prior knowledge in the product domain as compared to no bundling.

Lastly, firms can help adoption by designing launch tactics that increase consumer trust (Konya-Baumbach *et al.*, 2019), especially for RNPs for which privacy issues might be a concern (as might be the case for autonomous cars) and familiarity with the seller is low. Firms can also employ trendy gamification tactics by conveying product information in the form of a game as it enhances adoption through stimulating curiosity and enhancing perceived vividness of information presentation (Müller-Stewens *et al.*, 2017).

R14: Launch tactics should be sensitive to firms' overarching RNP strategy and foster trust with consumers.

Areas for Future Research

It is evident from the analyses and classifications above that RNP researchers have a lot to be proud of—the research we synthesised made big strides in understanding the elements affecting consumer learning, evaluation, as well as the role of consumer and situational characteristics, which ultimately impact consumers' initial RNPs adoption decisions. However, as with many theoretical literatures, the existing findings were fragmented. We have organised them into a cohesive set of nine theoretical bases toward the goal of giving prescriptive advice to both managers and consumers in the present research. In this section, we will use our synthesis to provide some thoughtful directions for future academic research.

Broadening the empirical knowledge by crossing multiple theoretical bases

The predominant focus of most extant studies on one single theoretical base neglects the possibility that interesting inter-relationships across different constructs and boundary conditions exist. One example of how this can be overcome is found in Castaño *et al.* (2008), which examines the combined role of mental simulation and construal level theory on perceptions of uncertainty. It is also notable

that there is a relative paucity of studies examining different strategic and tactical launch instruments in combination (e.g., targeting, positioning, pricing), with a notable exception being Schuhmacher *et al.* (2018). Future research could adopt a similar approach to allow a better understanding of how meaningful interactions between the nine theoretical bases included in our model (categorisation analogy, schema (in)congruity, visualisation, construal level, learning cost, consumer specific variables such as self-construal and situation specific variables such as firm's RNP strategy) can help companies muster the challenge of successful RNP introduction. For example, to generate a potential sample future research question by crossing categorisation and self-construal, we draw on Jain *et al.* (2007) which shows that when comparing two or more products, people from interdependent cultures judge paired products as less similar than people from independent cultures do, but only at the higher level of a category hierarchy (e.g., transportation vs. SUVs). Accordingly, we predict that

Sample H1: Consumers with an interdependent (independent) self-construal may understand the RNP better if it is placed at a lower (higher) category hierarchy.

Broadening the scope of research

It is quite notable that extant research in the domain of RNPs, which blossomed in the 1990s and 2000s, largely considers RNPs to be high-tech consumer durables such as digital cameras (Moreau *et al.*, 2001a, 2001b), AudioPC (Zhao *et al.*, 2009), smartphone or camcorders (Kuester *et al.*, 2015). While the category of consumer electronics remains relevant, our field seems to lack research acknowledging technological advancements that have led to smart, connected, digital, automated/autonomous products, and use artificial intelligence (Du and Xie, 2021). These products and services might also fit the definition of RNPs given that they tend to induce behaviour change, are surrounded by uncertainty, and are perceived to depart from established categories. Yet they are different from many of the durable new products because the utility derived from these smart technologies is dependent on both other connected devices and the interface of the connection. We encourage researchers to consider focusing on products and services emerging in this digital world while considering the peculiarities of these product categories.

By the same token, researchers could account for the change in consumer behaviour that has taken place during the past decades. The emergence of social networks and the role they play in peoples' lives warrants more research regarding how they can help or hurt in terms of consumer acceptance of RNPs. One interesting recent change in behaviour has been forced upon many through the coronavirus pandemic (with stay-at-home orders in place) is people experiencing isolation over

large periods of time in which Zoom meetings replace real world interactions. Future RNP research could more closely examine the role of the social ties, or lack thereof, on consumers' perceptions and behaviours. In this respect, RNP researchers might be inspired by consumer psychology research examining such issues in other contexts. For example, Duclos *et al.* (2013) show that consumers who feel isolated pursue riskier but more profitable options because these options make them more popular, thus reducing their isolation. Similarly, people are more likely to take chances when financial risk is more salient (Durante *et al.*, 2015). At the other end of the spectrum, Maeng *et al.* (2013) show that social crowdedness with strangers leads to risk aversion, but when the crowd consists of in-group members, people become less risk-averse. Finally, Zhu *et al.* (2012) show that people with strong ties to others are more risk-seeking because they know their in-group others will help them in case risk materialises. Integrating this research on social isolation and social connection into the realm of RNPs, marketers might be able to increase consumers' propensity for buying a RNP by (1) highlighting existing consumer isolation, thus suggesting the RNP will help them "connect" and become more popular, or (2) reminding consumers that they can rely on their tight-knit social network, thus suggesting they should try a RNP because of their solid support system. Accordingly, one could test the following prediction:

Sample H2: There is a U-shaped relationship between the extent of consumers' social network and the likelihood that they will adopt a RNP, such that making consumers feel isolated or reminding them of their strong ties to others increases their propensity toward risk and, thus, their adoption intention toward the RNP.

Accounting for recent theoretical advancements: Potentially positive role of uncertainty

As demonstrated, uncertainty is a central topic in RNP research as it surrounds the entire adoption process from a consumer perspective (Hoeffler, 2003). Thus, researchers have sought ways to resolve uncertainty to facilitate adoption. This focus has, of course, an intuitive appeal. Specifically, prior work indicates that the presence of uncertainty reduces the RNP's net benefits (net benefits = relative advantage—uncertainty; Moreau *et al.*, 2001a), in turn decreasing the likelihood of adoption. Consider the striking relative advantage that a fully autonomous car offers—it enables consumers to engage in many activities while travelling which otherwise were not possible (should they have to drive the car), including sleeping, reading a book, or working on their laptops. In addition, the autonomous car, if adopted by many, offers a much safer travel experience. However, the uncertainties surrounding consumers' abilities to achieve these benefits (about the technology,

legal aspects, etc.) represent major adoption “barriers” (Aggarwal *et al.*, 1998; Ram, 1989; Ram and Sheth, 1989).

Yet, recent consumer behaviour research suggests that RNP research should not adopt a one-dimensional view of uncertainty’s role. There is an increasing evidence that the presence of some uncertainty does not necessarily prompt negative consumer inferences and deter interest. Indeed, extant research documents occasions in which consumers *appreciate* the presence of uncertainty, suggesting interesting avenues for further research related to RNP adoption. For example, Goldsmith and Amir (2010) show that uncertain incentives (i.e., sales promotions that can be either X or Y) could be a more effective promotion strategy for consumers who do not elaborate too much. Similarly, Laran and Tsiros (2013) show that people thinking affectively (but not cognitively) like uncertainty in promotions involving a mysterious free gift (not sure which gift they will receive) because they like to be surprised. In the RNP domain, Amazon’s Alexa is an example of how uncertainty was embraced by consumers—the first adopters of the product who spoke English with a foreign accent were not understood well by Alexa, which created some uncertainty regarding the RNPs benefits. But instead of being discouraged, consumers continued using the product, and as they used it more, Alexa learned their pronunciations and functioned better (Harwell, 2018). Similar findings have been shown in the psychology literature where affective reaction to an event is more positive and lasts longer when the events are uncertain and one tries to resolve the uncertainty (Bar-Anan *et al.*, 2009; Wilson *et al.*, 2005). In this case, consumers who wished to reduce uncertainty around the product or situation invested more of their time and effort, leading to higher engagement.

Based on these results and consumer inferences, future research should unpack the conditions under which consumers welcome uncertainty around a RNP. As it is the very idea of many launch tactics to reduce uncertainty (mental simulation, etc.), research needs to re-evaluate these tools in the light of a potential dual effect of uncertainty on adoption in mind. Possible predictions about the positive role of uncertainty to test in future research could for example be

Sample H3: The presence of uncertainty can increase RNP evaluation when consumers make decisions affectively.

Sample H4: Evaluation and adoption of a RNP may increase when consumers purposely delay resolving the uncertainty surrounding the product until after they adopt it.

The respective areas for further research and our sample hypotheses are summarised in Table 3.

Table 3. Summary of research gaps and sample hypotheses.

Avenue for further RNP research	Sample hypotheses
<i>Broadening the Empirical Knowledge by Crossing Multiple Theoretical Bases</i>	Example: crossing categorisation and self-construal H1: Consumers with an interdependent (independent) self-construal may understand the RNP better if it is placed at a lower (higher) category hierarchy.
<i>Broadening the Scope of Research</i>	Example: Extending research on social connection and risk behaviour onto RNP domain H2: There is a U-shaped relationship between the extent of consumers' social network and the likelihood that they will adopt a RNP, such that making consumers feel isolated or reminding them of their strong ties to others increases their propensity toward risk and, thus, their adoption intention toward the RNP.
<i>Accounting for recent theoretical advancements: Potentially positive role of uncertainty</i>	Example: Apply recent research on the positive role of uncertainty in affective reactions in RNP evaluation. H3: The presence of uncertainty can increase RNP evaluation when consumers make decisions affectively. H4: Evaluation and adoption of a RNP may increase when consumers purposely delay resolving the uncertainty surrounding the product until after they adopt it.

Concluding remarks

We set two goals for this research. The first one is to create a framework (see Fig. 1) that will enable us to distil fragmented findings from extant research in a way that will be useful for RNP researchers, managers, and consumers. To that end, we synthesised research on RNPs with a specific focus on initial consumer reaction to RNPs. Through grouping papers (findings) by theoretical base, we were able to create new knowledge in addressing the overall role of uncertainty in the adoption process, and specifically around how consumers learn and evaluate RNPs. With these syntheses and extractions, we offered 14 implementable recommendations to managers of RNP. While each recommendation is uniquely effective under its circumstance based on extant research findings, some of them might seem to have opposite implications at face value. Therefore, managers should carefully evaluate their unique circumstance before applying the recommendations and avoid using different recommendations derived in different context simultaneously in the same context. Depending on the stage of RNP adoption process, target customers or the

situational characteristics, marketers should use a subset of recommendations and use them in a time-specific, customer-specific, or culture-specific manner.

Our second goal is to provide directions for future research with a special focus on the role of uncertainty. In terms of broadening the empirical knowledge base, future research should combine different theoretical bases to discover interrelations between multiple constructs. In terms of expanding the scope of research, future studies should extend to recent smart technologies rather than high-tech consumer durables, investigate the role of emerging consumer trends in RNP adoption such as the increasingly popular social network or consumers' new lifestyle, and examine the potentially positive role of uncertainty around RNPs. It is our hope that our synthesis and provision of novel research directions will be helpful to both researchers and practitioners.

Appendix. Rating scale used for paper selection.

Relevance Criteria	Relevance Criteria Fulfilled?						
	0	1	2	3	4	5	
Consumer-centric (B2C) innovation focus	✓	✓	✓	✓	✓	✓	
AND NPD stage = commercialisation		✓	✓	✓	✓	✓	
Individual consumer as unit of analysis		✓	✓	✓	✓	✓	
AND context = "new to the world" innovations		✓	✓	✓	✓	✓	
AND implicit focus on initial reactions to RNPs				✓		✓	
OR explicit focus on initial reactions to RNPs					✓	✓	
<i>E.g. papers on...</i>	<ul style="list-style-type: none"> Unrelated (non-innovation) topics Strategic/organisational aspects of firm innovativeness Employee/firm adoption of innovations B2B customer adoption of innovations Methodological contributions 	<ul style="list-style-type: none"> Consumer integration in earlier stages of NPD (e.g., ideation, concept testing) 	<ul style="list-style-type: none"> Diffusion Launch tactics with new product success as DV Meta-analyses 	<ul style="list-style-type: none"> Consumer reactions to brand extensions Consumers' reactions to novel product categories but without a focus on the newness aspect 	<ul style="list-style-type: none"> Consumers' long-term use of innovations Perceived product newness as DV initial reactions to innovations in general but with low applicability for the RNP context 	<ul style="list-style-type: none"> Consumers' initial reactions to product newness but without explicitly mentioning RNPs Consumers' initial reactions to innovations in general but with high applicability for the RNP context 	<ul style="list-style-type: none"> Consumers' initial reactions specifically to RNPs

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