Title

The performance effects of creative imitation on original products: Evidence from lab and field experiments

Journal

Strategic Management Journal, 44(1)

ISSN

0143-2095

Authors

Wang, Liangyan
Wu, Brian
Pechmann, Cornelia
et al.

Publication Date

2023

DOI

10.1002/smj.3094

Peer reviewed

THE PERFORMANCE EFFECTS OF CREATIVE IMITATION ON ORIGINAL PRODUCTS: EVIDENCE FROM LAB AND FIELD EXPERIMENTS

Liangyan Wang
Antai College of Economics and Management
Shanghai Jiaotong University
Huashan Road 1954
Shanghai P.R. China, 200030
Tel: 86-21-52301003
Email: WLY@sjtu.edu.cn

Brian Wu
Strategy Department
Stephen M. Ross School of Business
University of Michigan
701 Tappan St.
Ann Arbor, MI 48109-1234
Tel: 734-647-9542
Email: wux@umich.edu

Cornelia Pechmann
The Paul Merage School of Business
University of California Irvine
Irvine, CA 92697
Tel: 949-824-4058
Email: cpechman@uci.edu

Yitong Wang
UTS Business School
University of Technology Sydney
14 - 28 Ultimo Road
Ultimo, 2007, NSW, Australia
Tel: 61-2-9514-3783
Email: yitong_wang2019@outlook.com

This paper is forthcoming in the *Strategic Management Journal* Special Issue on Question-Driven and Phenomenon-Based Empirical Strategy Research.

Acknowledgements: We gratefully acknowledge the insights and constructive feedback from the Special Issue Co-Editor Will Mitchell and the two anonymous reviewers in helping us improve our manuscript. We are also grateful to Aseem Kaul, Hart Posen, and participants at the Academy of Management Annual Meeting and the Strategic Management Society Annual Conference for their comments

and suggestions on previous versions of this manuscript. Authors contributed equally.

THE PERFORMANCE EFFECTS OF CREATIVE IMITATION ON ORIGINAL PRODUCTS: EVIDENCE FROM LAB AND FIELD EXPERIMENTS

ABSTRACT

Research summary

A market entrant often challenges the incumbent using creative imitation: The entrant creatively combines imitated aspects of the original with its own innovative characteristics to create a distinct offering. Using lab and field experiments to examine creative imitation in China, we find the effects of creative imitations on the originals depend on the creative imitation's quality. We explore the underlying mechanisms, and show that including a low-quality creative imitation in the retail choice set increases satisfaction with and choice of the original, while a moderate-quality creative imitation does the opposite. Moreover, creative imitation affects consumers' satisfaction with the original by influencing whether their experience with the original verifies their expectations. Our paper reveals creative imitation effects to help incumbent firms effectively address them.

Managerial summary

When the incumbent is challenged by an entrant using creative imitation, consumers may react differently to the incumbent, and understanding consumers' reactions allows the incumbent to make better strategic decisions about how to address the challenge. Using lab and field experiments, we investigate creative imitations with two quality levels common in our empirical context, low quality and moderate quality, and examine how and why they differentially affect the originals. We find the presence of a low-quality creative imitation actually increased choice of the original by enhancing consumers' satisfaction with it, while a moderate-quality creative imitation reduced choice of the original by undermining satisfaction with it. Our research suggests the incumbent should address moderate-quality creative imitations' challenges to customer satisfaction, while temporarily tolerating low-quality creative imitations.

INTRODUCTION

The competitive interaction between an incumbent and an entrant in a marketplace has been a topic of central interest in the strategy field (Agarwal and Gort, 1996; Helfat and Lieberman, 2002; Henderson and Mitchell, 1997; McGahan, 2004; Mitchell, 1991). As first mover, the incumbent enjoys competitive advantages that include technological leadership, the preemptive accumulation of scarce assets, and the benefit of high consumer switching costs (Lieberman and Montgomery, 1988; Wernerfelt, 1991). To challenge the incumbent's original product, an entrant may often utilize imitation (Ethiraj and Zhu, 2008; Knott, Posen, and Wu, 2009; Peteraf, 1993) and, in particular, a "creative imitation" strategy whereby the entrant creatively combines imitated aspects of the incumbent's original product with its own innovative characteristics to create a distinct offering typically offered at a competitive lower price (Kim and Nelson, 2000; Nelson and Winter, 1982). Products based on creative imitation have the potential to erode the original product's market share. To effectively cope with this challenge, it is important to understand the nature of the creative imitations' competitive effects on the originals and to explore the process mechanisms underlying consumers' product choices. In seeking this understanding, we answer the call by Lieberman and Asaba (2006, p. 382) "…to improve our understanding of the benefits and costs of imitation in specific contexts. …"

Following the pioneering work by Levinthal (1997), we conceptualize the incumbent's original product as consisting of a bundle of attributes and attribute interactions; a creative imitation then imitates some of these but adds its own distinctive attributes and characteristics (Alchian, 1950; Giachetti, Lampel, and Li Pira, 2017; Kim and Nelson, 2000; Posen and Martignoni, 2018). A creative imitation will not fully replicate the attribute configuration because of causal ambiguity (Lippman and Rumelt, 1982; Reed and DeFillippi, 1990), legal concerns (Clarkson and Toh, 2010; Polidoro and Toh, 2011; Somaya, 2012), and/or cost saving issues (Csaszar and Siggelkow, 2010; Giachetti et al., 2017). Due to their distinctiveness, creative imitations do not violate intellectual property laws and can legally enter the marketplace (Ethiraj and Zhu, 2008; Posen and Chen, 2013; Posen and Martignoni, 2018).

The concept of creative imitation can be further clarified by distinguishing it from two related concepts. Kim and Nelson (2000) identify three stages of entrants challenging incumbents: duplicative imitation, creative imitation, and innovation. Duplicative imitations include straightforward knock-offs which fall into the domain of counterfeits (Commuri, 2009; Lai and Zaichkowsky, 1999; Paquette, 2018; Wilcox, Kim, and Sen, 2009). Duplicative imitations also include store brands and private labels commissioned by large mainstream retailers to provide lower cost alternatives to originals that lack patent protection; they use the retailer label to avoid deception (Aribarg, Arora,

Henderson, and Kim, 2014; Dhar and Hoch, 1997; Pauwels and Srinivasan, 2004; Soberman and Parker, 2006; van Horen and Pieters, 2012; Warlop and Alba, 2004). At the other extreme are challengers that offer major innovations (Nelson and Winter, 1982; Helfat et al., 2007). The duplicative imitation and innovation strategies have already been extensively studied in the literature, so we focus on the less studied creative imitation strategy.

Creative imitations may have different quality levels compared to the originals, ranging from low to moderate to high quality. (For simplicity, we use high quality to refer to comparable or even higher quality than the original.) A creative imitation can be low quality when, to offer a low price point, it excludes features and downgrades components, while adding features that may be poorly configured and detract from attribute coherence (Agnihotri, 2015; Lindtner, Greenspan, and Li, 2015). A creative imitation can reach a moderate quality level and price point if it includes better components, features, and attribute configurations than its low-quality counterpart, and is more similar to the original but still below it quality-wise (Yip and McKern, 2016; Zhu and Shi, 2010). A high-quality creative imitation adds quality innovative features that meet domestic needs better than the original, it does not sacrifice important features, and it uses high-quality components; it goes head to head against the original (Kim and Nelson, 2000; Schnaars, 1994; Yip and McKern, 2016).

When creative imitations enter the market and challenge incumbents, consumers are likely to react differently to the incumbents. Understanding consumers' reactions to different creative imitations allows incumbents to make better strategic decisions regarding what to do about the creative imitations, e.g., fight, ignore, or even tacitly support them. While prior strategy research has recognized the significant role of creative imitation, empirical research has been limited, relying mainly on mathematical models or secondary data (Giachetti et al., 2017; Kim and Nelson, 2000; Lee and Zhou, 2012; Posen and Martignoni, 2018; Shenkar, 2010), without the benefit of primary data or consumer data. To fill the gaps, we derive our research methodology from the marketing literature; we use lab and field experiments to collect primary consumer data, which enables us to explore both process mechanisms and final outcomes while maintaining external validity.

The current research uses creative imitation in China as the empirical setting, because the creative imitation phenomenon is highly prevalent there (Tse, Ma, and Huang, 2009; Yip and McKern, 2016), and the Chinese economy plays a vital role globally (Rodrik, 2017). China is in the stage of economic development where lower-level creative imitation is prevalent, but technological leapfrogging and true innovation are relatively rare (Lindtner et al., 2015; Yip and McKern, 2016). While high-quality creative imitations exist in China, consumers are more likely to see low- or moderate-quality creative imitations or "creative adaptations"

that are inspired by but different and cheaper than the originals (Kim and Nelson, 2000).

Our main research question is: How does the presence of a creative imitation that is either low or moderate in quality affect the original by influencing consumer reactions to the original? This question is an empirical one, in line with our question-driven and phenomenon-based research approach. That is, rather than examining all possible quality levels that a creative imitation might have, we focus on contingencies based on the primary characteristics of our empirical setting: the Chinese marketplace.

In our research, we conducted two lab experiments and three field experiments, four involving consumer electronics and one involving beverages, that assessed consumer perceptions and/or choice of the original products when the originals were offered alone or alongside the creative imitations. One of our field experiments (experiment 3) examined actual sales of the original Apple iPhone in China when this product was an exclusive offering on retail store shelves, as compared to when creative imitation products were offered as well. Manipulating the presence versus absence of a creative imitation in the retail choice set allowed us to assess its effects on the original; and manipulating the quality of the imitation allowed us to study this variable as a contingency. Joining the growing body of strategy research focusing on individual-level analyses (e.g., Laureiro-Martínez, 2014; Laureiro-Martínez and Brusoni,

2018; Shapira and Shaver, 2014), our selection of research methodology aligns with the recognized need for interdisciplinary studies that can push the strategy field forward (Burbano, 2016; Elfenbein, Knott, and Croson, 2017; Harmon, Kim, and Mayer, 2015).

Our five experiments provide multiple interesting results that can inform business strategy regarding how to cope with creative imitation. Contrary to the general belief that imitations always hurt the original products, our experiments show that adding creative imitations to the retail choice set can either benefit or harm the originals, depending on the quality of the creative imitation. Adding a low-quality creative imitation actually benefitted the original, while adding a moderate-quality creative imitation harmed the original.

To uncover the underlying mechanisms that drove these performance outcomes, we studied consumers' perceptions of and satisfaction with the original. Our experiments show the performance outcomes were mediated by consumer perceptions called "disconfirmation of expectations" (Bloemer and Dekker, 2007; Oliver, 1980; Spreng and Chiou, 2002), which, in turn, influenced consumer satisfaction with the original (Oliver, 1980; Westbrook and Oliver, 1991). When a low-quality creative imitation was added to the retail choice set, and consumers observed its poor attribute configuration, features, and makeup, this caused a positive disconfirmation of expectations about the original, which increased consumers' satisfaction with and choice of the

original. However, when a moderate-quality creative imitation was added to the retail choice set, with its reasonable attribute configuration including some good added features, this caused a negative disconfirmation of expectations about the original, which decreased consumers' satisfaction with and choice of the original. Consumer satisfaction is important to firms, because it relates to product complaints, word of mouth, and continued product usage (Oliver, 1980; Westbrook and Oliver, 1991). Thus, by studying the underlying mechanisms, our research sheds new light on how consumer perceptions of incumbents are changed when new entrants enter using a creative imitation strategy, and how the incumbents can cope more effectively depending on the creative imitation's quality level.

In addition, by showing the beneficial effect of a low-quality creative imitation, we document a new violation of a fundamental principle of economics: regularity of choice (Luce, 1977). This principle states that "one cannot increase the probability of choosing an item by adding other items" (Huber, Payne, and Puto, 1982, p. 91). A known violation of this principle is the attraction effect (Ariely, 2010; Huber et al., 1982; Huber and Puto, 1983; Mourali, Böckenholt, and Laroche, 2007; Ratneshwar, Shocker, and Stewart, 1987; Simonson, 1989; Simonson and Tversky, 1992), in which a product that is strong on one of two conflicting attributes benefits from the addition of an asymmetrically dominated alternative by drawing attention to its strong attribute. Another violation

is the compromise effect (Mourali et al., 2007; Simonson, 1989; Simonson and Tversky, 1992), in which a product with moderate values on two conflicting attributes benefits from the addition of an extreme product by encouraging consumers to compromise. We identify a new violation of the principle of regularity: A high-quality and high-price original benefits from the addition of a low-quality and low-price creative imitation, even though the imitation is not asymmetrically dominated as in the attraction effect, nor does it have moderate values as in the compromise effect.

Our research also provides new insights into strategic responses to moderate-quality creative imitations. The finding that these imitations reduce choice of the originals follows from the standard vertical differentiation model (Shaked and Sutton, 1982, 1987), but the novelty of our research is showing that a moderate-quality creative imitation can negatively affect consumer satisfaction with the original, which can ultimately harm the long-term viability of the original (Anderson, 1973; Oliver, 1980; Westbrook and Oliver, 1991). Thus, it may be insufficient for the original producers solely to lower their prices in cope with moderate-quality creative imitations. Original producers may need to mount all-out challenges to moderate-quality creative imitations by pursuing ways to enhance customer satisfaction with their products.

THE PHENOMENON STUDIED

Creative imitation is currently pervasive in many emerging economies including those of China, Brazil, India, Mexico, and Turkey

(Bartlett and Ghoshal, 2000; Chittoor, Sarkar, Ray, and Aulakh, 2009; Luo, Sun, and Wang, 2011; Nijher, 2018), and across many industries including electronics, apparel, toys, and beverages (Qin, Shi, Song, Stöttinger, and Tan, 2018). The regulatory and legal environments in these countries tend to be more tolerant of imitation (Hennessey, 2011; Lai and Zaichkowsky, 1999). Also, consumers in developing economies often have idiosyncratic needs that afford domestic firms the opportunity to add specific features to cater to them while keeping prices low (Leng and Zhang, 2011; Liu, Xie, and Wu, 2015; Yip and McKern, 2016; Zhu and Shi, 2010).

In China, which is our empirical context, creative imitation is so widespread it has entered the consumer and business vernacular; it is called “Shanzhai” (Tse et al., 2009). Several environmental factors explain the predominance of Chinese creative imitations. Chinese producers gain ready access to standard components and low-cost contract production from the manufacturing ecosystem that China has developed while serving as the world’s factory (Lindtner et al., 2015; Tse, 2010). Chinese producers also benefit from the open, modular architectures available in some industries (Baldwin and Clark, 2000; Hoetker, Swaminathan, and Mitchell, 2007). Furthermore, small- and medium-sized retail stores in China welcome creative imitations, which generate considerable sales due to their lower price points and unique attribute configurations; only the large chain stores and flagship

company stores shun these imitators (Agnihotri, 2015; Tse et al., 2009; Zhu and Shi, 2010). For example, in 2012, of 17,000 retail outlets that sold iPhones, only 12 were official Apple stores that sold only the original (Shen, 2013); most others sold both the original and the creative imitation (Lindtner et al., 2015).[1]

In sum, low- and moderate-quality creative imitations that cater to domestic needs are commonly sold in the Chinese marketplace (Agnihotri, 2015; Lindtner et al., 2015; Tse et al., 2009; Yip and McKern, 2016; Zhu and Shi, 2010). Along with the original iPhone, shoppers may see a low-quality creative imitation cell phone that drops the mute switch to reduce costs, adds a removable battery cover that compromises the phone's structure, and overall is poorly constructed and configured. In addition, shoppers may see a moderate-quality creative imitation cell phone that adds dual SIM card slots and extra loudspeakers but drops other beneficial features and uses inferior components, so overall it is clearly lower in quality than the original, though superior to its low-quality counterpart.

OVERVIEW OF OUR LAB AND FIELD EXPERIMENTS

We conducted a series of lab and field experiments to investigate the effects of creative imitations on the originals. Experiment 1, in a lab setting with university students, reveals the counterintuitive finding that when a low-quality creative imitation is added to the choice set, intent to

[1] We conducted nine interviews with small- and medium-sized retailers in China to confirm this and other background information about the creative imitation phenomenon there.

choose and satisfaction with the original are actually enhanced. Experiment 2, in a retail field setting with shoppers, shows the opposite effects of a moderate-quality creative imitation on the original: The original is hurt. Experiment 3 replicates the effects of the low- and moderate-quality creative imitations on the originals using actual sales data from the field. Experiment 4, using real shoppers in a retail field setting, reveals the mediating process that explains how a creative imitation affects satisfaction with the original: through disconfirmation of expectations about the original. Experiment 5 replicates the findings regarding the underlying mediating processes using a lab taste test of original and creative imitation beverages. Table 1 summarizes our experiments, participants, settings, product specifications, and results.

[INSERT TABLE 1 HERE]

EXPERIMENT 1. EFFECTS OF A LOW-QUALITY CREATIVE IMITATION

Overview

In Experiment 1, which utilized a lab setting, we used a one-factor between-subjects design to examine the effects of adding a low-quality creative imitation to a retail choice set along with the original. Participants were 60 students, ages 20–30, from a public university located in eastern China; 62% were female. We note that students are often used in experimental research in the strategy field (e.g., Csaszar and Laureiro-Martínez, 2018; Elfenbein et al., 2017; Laureiro-Martínez, 2014; Shapira and Shaver, 2014). Participants were randomly assigned to

view a retail display with the original Apple iPad only, or both the original Apple iPad and a low-quality creative imitation. The low-quality creative imitation was similar to the Apple iPad in terms of its shape, color, and basic functionalities but it creatively added a TF card port and it used noticeably cheaper parts, so consumers could clearly distinguish the two products. This low-quality creative imitation was legally sold in electronic retail stores in China jointly with the original Apple iPad. (see Table 1 for product specifications).

Methods

Procedure. Participants were recruited via SMS text messages, using a list of students who had indicated a willingness to participate in a behavioral experiment for 7 yuan (about 1 USD). Using the last digit of the student ID (an odd vs. even number, randomly assigned to students during enrollment in the university), 30 participants were randomly assigned to view a retail display with the original Apple iPad only, and the other 30 participants viewed both the original Apple iPad and the low-quality creative imitation.

The data were collected in a simulated retail environment. Two separate retail displays were set up in two rooms that were identical in size, temperature, lighting, etc. Upon arrival the participants signed in, were greeted by a research assistant, and were led to one of the two rooms. Only one participant was in the room at a time, and each participant spent about 10–15 minutes trying the product(s). When the

retail choice set included both products, participants were told which product was the creative imitation and which was the original Apple iPad. Further, the creative imitation product sometimes appeared on the left and other times on the right, which was counterbalanced, and participants were instructed to try the product on the left or right first, which was also counterbalanced. After this product trial, participants completed a questionnaire with the dependent measures, personality measures as potential covariates, and demographic measures. Finally, participants were thanked, paid, and dismissed.

Dependent Measures. The questionnaire measured participants' intent to choose the original: "How likely are you to purchase an Apple iPad?" (1 = very unlikely, 7 = very likely). Then, it measured their satisfaction with the original using five scale items which were later averaged (Phillips and Baumgartner, 2002): "To what extent are you satisfied with Apple iPad's outward appearance? To what extent are you satisfied with Apple iPad's touchscreen sensitivity? To what extent are you satisfied with Apple iPad's audio-visual performance? To what extent are you satisfied with Apple iPad's data transmission speed? To what extent are you satisfied with Apple iPad's software support?" (1 = extremely dissatisfied, 7 = extremely satisfied; $\alpha = 0.92$). The correlation between intent to choose the product and product satisfaction was 0.39.

Analyses. We used a one-factor between-subjects analysis of variance to test the effects of a choice set that included the original only,

or the original and the low-quality creative imitation. We measured two personality traits as potential covariates: brand consciousness (α = 0.81) (Nelson and McLeod, 2005) and price consciousness (α = 0.95) (Alford and Biswas, 2002). However, these were not significant covariates or moderators, so they were excluded from the final analyses.

Results

The choice set affected intent to choose the original product. Participants whose retail choice set included both the original and the low-quality creative imitation exhibited a higher intent to choose the original, relative to participants whose choice set was solely the original (means = 4.77 versus 3.17; $F(1, 58) = 17.19$, $p < 0.01$, $\eta_p^2 = 0.229$). The choice set also affected satisfaction with the original. Participants whose retail choice set included both the original and the low-quality creative imitation were more satisfied with the original, compared to participants whose choice set was solely the original (means = 5.83 versus 5.33; $F(1, 58) = 4.43$, $p = 0.04$, $\eta_p^2 = 0.071$). In sum, Experiment 1 assessed the effects of adding a low-quality creative imitation to a retail choice set along with the original, and this actually enhanced intent to choose and satisfaction with the original. See Figure 1.

[INSERT FIGURE 1 HERE]

EXPERIMENT 2. EFFECTS OF A MODERATE-QUALITY CREATIVE IMITATION

Overview

In Experiment 2, we examined a moderate-quality creative imitation rather than a low-quality one. Moreover, we conducted a field experiment of adults shopping for the product in an actual retail store. Due to the strong sales performance of creative imitation cell phones, we used cell phones in this experiment and in our next two experiments.

To begin, we conducted a separate manipulation check where we asked a different group of real shoppers to view and rate the Apple iPhone 4, and the low- and moderate-quality creative imitations, that we planned to use in our subsequent experiments. This manipulation check verified that shoppers recognized the quality difference between the low- and moderate-quality creative imitations (means = 2.96 versus 3.54; $F(1, 58) = 4.08$, $p = 0.05$, $\eta_p^2 = 0.066$) and between the moderate-quality creative imitation and the original (means = 3.54 versus 5.98; $F(1, 59) = 113.07$, $p < 0.01$, $\eta_p^2 = 0.657$). The low- and moderate-quality creative imitation phones also fit our definitions of these product types, because they imitated the iPhone's shape and color and were sold through legal distribution channels, but they dropped and downgraded features, and added other features that catered to domestic needs but with lower quality components and less structural integrity. The moderate-quality creative imitation which was the focus of Experiment 2 was lower in quality than the original, but higher in quality than its low-quality counterpart, as the manipulation check above shows (see Table 1 for product specifications).

Experiment 2's participants were 65 shoppers in a medium-sized city in eastern China who were recruited at a Chinese electronics retail center where hundreds of small electronics stores sold both the originals and the creative imitations. The shoppers were ages 16–55, and 67% were male. A one-factor between-subjects design was used to study the effects of adding a moderate-quality creative imitation to a retail choice set that included the original. Specifically, shoppers were randomly assigned to try only the original Apple iPhone 4, or to try both the original Apple iPhone and a moderate-quality creative imitation phone.

Methods

Procedure. Data were collected on a Saturday in the electronics retail center. The research assistants asked shoppers whether they would be willing to participate in a product trial for around 10–15 minutes, for 10 yuan (about 1.5 USD) and a small gift. Shoppers who agreed to participate were asked to sign up and then ushered into a booth. The two retail choice sets were set up in identical booths and shoppers were randomly assigned to a booth and given 10–15 minutes to try the product(s). All other procedures were identical to those in Experiment 1.

Dependent Measures. The questionnaire measured shoppers' intent to choose the original: "How likely is it that you will purchase the iPhone?" (1 = very unlikely, 7 = very likely). Then, it measured their satisfaction with the original using three items similar to Experiment 1, which were averaged later (Phillips and Baumgartner, 2002). The

correlation between intent to choose the product and product satisfaction was 0.50.

Analyses. We used a one-factor between-subjects analysis of variance to test the effects of adding versus not adding a moderate-quality creative imitation to the retail choice set. We initially include ownership of Apple products as a covariate, but it was not a significant covariate or moderator and so it was dropped from the final analyses.

Results

Shoppers who saw both the moderate-quality creative imitation and the original had a lower intent to choose the original, relative to shoppers who saw only the original (means = 4.85 versus 5.57; $F(1, 63) = 2.99$, $p = 0.08$, $\eta_p^2 = 0.045$). Parallel results were found for satisfaction with the original. Shoppers who saw both products were less satisfied with the original compared to those who saw only the original (means = 5.86 versus 6.31; $F(1, 63) = 4.39$, $p = 0.04$, $\eta_p^2 = 0.065$). See Figure 1.

To summarize, Experiment 2 found that adding a moderate-quality creative imitation to the retail choice set along with the original diminished shoppers' satisfaction with the original and their intent to choose the original. Combining Experiments 1 and 2, we observed that the low-quality and moderate-quality creative imitations had opposite effects on the original; the low-quality one actually helped the original while the moderate-quality one hurt it. In the next experiment, we sought to quasi-replicate our prior findings in a field setting with sales data. As

argued by Bettis, Helfat, and Shaver (2016, p. 2195), these types of replications "hold especially strong promise for the field of strategic management, because quasi-replications inform us about how well results hold up in multiple settings, measures and methods."

EXPERIMENT 3. QUASI-REPLICATION IN THE FIELD WITH ACTUAL SALES

Overview

Experiment 3 was a field experiment in which we manipulated the inclusion of creative imitation products in the retail choice set, in cooperation with an actual electronics store that carried both creative imitations and the original. We measured daily unit sales of the original as our dependent variable. With the assistance of the store manager and salespeople, we conducted the experiment in a medium-sized city in eastern China. We used a one-factor between-subjects design with three levels. Shoppers were randomly assigned to see on the retail store shelf only the original Apple iPhone 4, both the original Apple iPhone 4 and a low-quality creative imitation, or both the original Apple iPhone 4 and a moderate-quality creative imitation. (See Table 1 for product specifications and see Experiment 2 for product quality manipulation checks.)

Methods

Procedure. At our request, for one month (30 consecutive days), every three days in sequence, the store sold the original Apple iPhone,

followed by the moderate-quality creative imitation phone alongside the original Apple iPhone, and then the low-quality creative imitation phone alongside the original Apple iPhone. Salespeople were trained to remove the creative imitation, or to place the designated creative imitation and the original side-by-side on the counter, with side counterbalanced, on the specified days. The salespeople were also trained to identify the creative imitation phones to shoppers, let shoppers try the product(s), a procedure that lasted about 10 minutes on average, and record unit sales of the original at the end of each day for 30 days.

Dependent Measure and Analyses. Average daily unit sales of the original served as the dependent measure, and the data were analyzed using one-factor analysis of variance.

Results

Average daily unit sales of the original were higher when the low-quality creative imitation was added to the retail choice set, as compared to when it was not added (means = 3.8 versus 2.9; $F(1, 18) = 2.98$, $p = 0.10$, $\eta_p^2 = 0.142$). In contrast, average daily unit sales of the original were lower when the moderate-quality creative imitation was included in the retail choice set, as compared to when it was not included (means = 1.9 versus 2.9; $F(1, 18) = 4.55$, $p = 0.05$, $\eta_p^2 = 0.202$). See Figure 2.

[INSERT FIGURE 2 HERE]

This field experiment found that adding a low-quality creative imitation to the retail choice set along with the original increased unit

sales of the original, while adding a moderate-quality creative imitation to the retail choice set along with the original decreased unit sales of the original. Our first three experiments indicated that adding a creative imitation product to the retail choice set influenced choice of the original, and two of these experiments found corresponding effects on consumer satisfaction. However, we still do not know why the creative imitations affected satisfaction with the originals. In the next two experiments, we draw on the marketing literature to explore a potential process mechanism: disconfirmation of expectations about the original.

EXPERIMENT 4. DISCONFIRMATION OF EXPECTATIONS ABOUT THE ORIGINAL

Overview

In the prior three experiments, we examined consumer satisfaction with and sales of the originals in response to the presence of creative imitations. In our final two experiments, we explore an underlying process mechanism that may explain consumer satisfaction, using a theory and a methodology from marketing. We use the theory of disconfirmation of expectations which, in the marketing literature, is “the dominant framework for explaining consumer satisfaction” (Phillips and Baumgartner, 2002, p. 243). This theory posits that satisfaction with a product originates with a comparison between a consumer’s perception of product quality and the consumer’s expectation about product quality, and any discrepancy between the two causes expectancy disconfirmation

(Anderson, 1973; Oliver, 1980; Phillips and Baumgartner, 2002; Westbrook and Oliver, 1991). If the product is worse than expected, there is negative confirmation of expectations, which elicits consumer dissatisfaction. If the product is better than expected, there is positive confirmation of expectations, which produces consumer satisfaction (Oliver and DeSarbo, 1988). In sum, it is not the absolute quality level that affects consumers' product satisfaction, but rather the quality level relative to what was expected (Anderson, 1973; Oliver, 1980). Past research also indicates that adding a product to a choice set can elicit disconfirmation of expectations about an initial product in the choice set (Evangelidis and Van Osselaer, 2018).

Therefore, in our two final experiments, we include a measure of disconfirmation of expectations about the original. Including this measure allows us to directly examine whether adding a creative imitation to the choice set affects disconfirmation of expectations about the original. We can also formally test whether disconfirmation of expectations is the underlying mediating process that explains satisfaction with the original.

Methods

Procedure. In Experiment 4, we used the same product stimuli from Experiments 2-3. Participants were 60 shoppers in a field setting, an electronics retail center in a medium-sized city in eastern China, who were ages 15–45 and 60% female. We used a one-factor between-subjects design that varied creative imitation quality. All shoppers saw

both a creative imitation phone and the original Apple iPhone on display, but the creative imitation was either low or moderate quality.

Data were collected on a Saturday and Sunday at the electronics center. Our research assistants asked shoppers if they would agree to participate in a product experiment for around 10–15 minutes, and we offered 10 yuan (about 1.5 USD) and a small gift as compensation. Shoppers who agreed to participate were randomly assigned to one of two booths where they could try either the low- or moderate-quality creative imitation phone along with the original Apple iPhone for about 10–15 minutes. Shoppers then completed a questionnaire asking about the dependent measures, their Apple product ownership, and their demographics. Finally, shoppers were thanked, paid, and given a small gift.

Dependent Measures. The questionnaire first measured shoppers' satisfaction with the original using five questions similar to those used in Experiments 1 and 2 (Phillips and Baumgartner, 2002). Then it measured disconfirmation of expectations about the original (Phillips and Baumgartner, 2002): "Overall, to what extent is the Apple iPhone that you just viewed and played with close to your prior expectations of an Apple iPhone?" (1 = far worse than expected, 7 = far better than expected).

Analyses. We used a one-factor between-subjects analysis of variance to examine the effects of including the low- or moderate-quality

creative imitation in the retail choice set on disconfirmation of expectations about and satisfaction with the original. We initially included age, gender, and Apple product ownership as covariates, but these variables were neither covariates nor moderators, so they were dropped from the final analyses. We also conducted formal tests of mediation, as discussed below.

Results

When the retail choice set included the low-quality creative imitation as compared to the moderate-quality creative imitation, there was a positive disconfirmation of expectations about the original (means = 5.70 versus 4.86; $F(1, 58) = 14.14$, $p < 0.01$, $\eta_p^2 = 0.199$). Also, when the retail choice set included the low-quality creative imitation as compared to the moderate-quality creative imitation, satisfaction with the original was higher (means = 6.28 versus 5.89; $F(1, 58) = 3.81$, $p = 0.05$, $\eta_p^2 = 0.062$).

Mediation analyses tested whether the effect of the creative imitation's quality on satisfaction with the original was mediated by disconfirmation of expectations about the original (Hayes, 2013; Model 4). The results show that displaying a low- versus moderate-quality creative imitation led to a positive disconfirmation of expectations about the original (a path: $b = 0.84$, $SE = 0.22$, $p < 0.01$) and increased satisfaction with the original (c path: $b = 0.38$, $SE = 0.20$, $p = 0.06$). Moreover, disconfirmation of expectations about the original affected

satisfaction with the original (b path: b = 0.30, SE = 0.11, p = .01). A 5,000 sample bootstrap analysis confirmed an indirect effect of creative imitation quality on satisfaction with the original that was mediated by disconfirmation of expectations about the original (a x b path: b = 0.25, SE = 0.12, 95%, CI 0.07, 0.58). Finally, the direct effect of creative imitation quality on satisfaction with the original was non-significant once disconfirmation of expectations about the original was included in the model, showing full mediation (c' path: b = 0.14, SE = 0.21, p = 0.50; Figure 3).

[INSERT FIGURE 3 HERE]

Discussion

Experiment 4 revealed that a creative imitation can affect disconfirmation of expectations about the original which, in turn, can influence satisfaction with the original. The low-quality creative imitation resulted in a positive disconfirmation of expectations about the original and increased satisfaction with the original, relative to a moderate-quality creative imitation. In sum, Experiment 4 revealed the process mechanisms underlying the influences of creative imitations on the originals.

EXPERIMENT 5. REPLICATION OF PROCESS USING A BEVERAGE TASTE TEST

Overview

In Experiment 5, we tested the robustness of our findings regarding the underlying mediation process: that disconfirmation of expectations about the original affected satisfaction with the original. To do this, we asked Chinese consumers to taste a familiar original beverage about which they had prior expectations, in a lab setting, using a taste test methodology employed in marketing (Pechmann and Ratneshwar, 1992). We studied Kangshifu bottled tea which is a popular drink in China. The high-quality original, Kangshifu, entered the Chinese market in 1996 and attained the leading market share for ready-to-drink teas (Euromonitor International, 2017). However, cheaper creative imitations are legally offered in small and medium-sized retail stores, along with the original. The moderate-quality creative imitation has less sugar because some consumers feel the original is too sweet, but nonetheless its taste is inferior because it uses much-lower-quality tea leaves. The low-quality creative imitation is worse; it uses cheap tea flavor additives rather than actual tea leaves, and it has a strong artificial taste. We conducted a manipulation check of the low- and moderate-quality creative imitations, and the low-quality one was perceived as lower in quality (means = 1.65 and 3.98; $F(1, 38) = 83.29$, $p < 0.01$, $\eta_p^2 = 0.687$).

Participants in the main experiment were 85 university students from a public university in eastern China, ages 21 to 34, and 70% were male. We used a one-factor between-subjects design with three levels: Participants were randomly assigned to consume the original, the original

and a moderate-quality creative imitation, or the original and a low-quality creative imitation (see Table 1 for product specifications).

Methods

Procedure. The participant recruitment procedures were similar to Experiment 1. Participants were randomly assigned to taste the original tea only, the original and the low-quality creative imitation, or the original and the moderate-quality creative imitation. When participants were assigned to taste both the original and a creative imitation, we poured the drinks into two identical cups, and told participants the original was on the left and the creative imitation was on the right or vice versa, with the side counterbalanced. When participants were assigned to taste just the original, we poured only this drink into a cup. Participants could see the labeled bottle(s) adjacent to the cup(s). Participants were given a few minutes to drink the product(s). Afterward, they completed a questionnaire with the dependent measures, demographic measures, and questions to assess their current thirst and prior use of the tea. Finally, participants were thanked, paid, and dismissed.

Dependent Measures. First, we measured satisfaction with the original tea using two items, which were later averaged (Phillips and Baumgartner, 2002): “How do you perceive the taste of the original tea? How do you like the original tea?” (1 = extremely bad or dislike, 7 = extremely good or like; $\alpha = 0.90$). Then, we measured disconfirmation of expectations about the original (Phillips and Baumgartner, 2002):

“Overall, to what extent is the original tea that you just drank and tasted close to your prior expectations of it?” (1 = far worse than expected, 7 = far better than expected).

Analyses. We used a one-factor analysis of variance to assess satisfaction with and disconfirmation of expectations regarding the original. One set of analyses compared tasting the original alone versus tasting it along with the low-quality creative imitation. The second set of analyses compared tasting the original only versus tasting it along with the moderate-quality creative imitation. We initially included current thirst and prior use of the tea as covariates, but these were not significant covariates or moderators so they were excluded from the final analyses.

Results

Participants who drank both the original and the low-quality creative imitation were more satisfied with the original compared to those who drank only the original (means = 5.38 versus 4.84; $F(1, 53) = 4.62$, $p = 0.04$, $\eta_p^2 = 0.08$). Participants who drank both the original and the moderate-quality creative imitation were less satisfied with the original compared to those who drank only the original (means = 4.22 versus 4.84; $F(1, 53) = 10.52$, $p < 0.01$, $\eta_p^2 = 0.166$). See Figure 2.

Moreover, when consumers tasted both the original and the low-quality creative imitation, there was a positive disconfirmation of expectations about the original compared to when they tasted the

original only (means = 4.67 versus 4.16; $F(1, 53) = 5.15$, $p = 0.03$, $\eta_p^2 = 0.089$). When consumers tasted the original and the moderate-quality creative imitation, expectations regarding the original were not negatively disconfirmed compared to when they tasted the original only (means = 4.00 versus 4.16; $F(1, 53) = 1.07$, $p = 0.31$, $\eta_p^2 = 0.020$), but were negatively disconfirmed compared to tasting the original and the low-quality creative imitation (means = 4.00 versus 4.67; $F(1, 58) = 10.00$, $p < 0.01$, $\eta_p^2 = 0.147$).

We conducted meditation analyses using Hayes' Model 4 (Hayes, 2013). Tasting the low-quality creative imitation with the original, versus the original only, caused a positive disconfirmation of expectations about the original (a path: $b = 0.33$, $SE = 0.15$, $p = 0.03$) and increased satisfaction with the original (c path: $b = 0.36$, $SE = 0.16$, $p = 0.03$). Moreover, disconfirmation of expectations about the original affected satisfaction with the original (b path: $b = 0.66$, $SE = 0.13$, $p < 0.01$). A 5,000 sample bootstrap analysis verified a significant indirect effect of the low-quality creative imitation on satisfaction with the original that was mediated by disconfirmation of expectations about the original (a x b path: $b = 0.22$, $SE = 0.12$, 95%, CI 0.09, 0.40). Also, the direct effect of the low-quality creative imitation on satisfaction with the original was reduced to non-significance once disconfirmation of expectations about the original was included in the model, indicating full mediation (c' path: $b = 0.14$, $SE = 0.13$, $p = 0.31$). In sum, the low-quality creative imitation

caused a positive disconfirmation of expectations about the original which increased satisfaction with the original (Figure 4A).

[INSERT FIGURE 4 HERE]

Turning to the moderate-quality creative imitation, tasting it with the original, as opposed to tasting the original only, non-significantly affected disconfirmation of expectations about the original (a path: b = -0.15, SE = 0.10, p = 0.13), but negatively affected satisfaction with the original (c path: b = -0.39, SE = 0.09, p < 0.01). Disconfirmation of expectations was directly related to satisfaction with the original (b path: b = 0.74, SE = 0.10, p < 0.01). Furthermore, a 5,000 sample bootstrap analysis revealed a marginal indirect effect of the moderate-quality creative imitation on satisfaction with the original that was mediated by disconfirmation of expectations about the original (a x b path: b = -0.11, SE = 0.07, 90%, CI -0.25, -0.01). Finally, the direct effect of the moderate-quality creative imitation on satisfaction with the original was reduced once disconfirmation of expectations about the original was included in the model, indicating partial mediation (c' path: b = -0.28, SE = 0.10, p = 0.01). In sum, there is partial evidence that the moderate-quality creative imitation caused a negative disconfirmation of expectations about the original which lowered satisfaction with the original (Figure 4B).

Discussion

This experiment replicated the results of our prior experiments in a different context and showed that including a creative imitation together with an original in the choice set affected disconfirmation of expectations about the original which, in turn, influenced satisfaction with the original. When a low-quality creative imitation beverage was added to the choice set with the original, consumers reported that the taste of the original exceeded their expectations, evoking a positive disconfirmation of expectations about it; and, as a result, consumers were more satisfied with the taste of the original. In contrast, when a moderate-quality creative imitation beverage was added to the choice set with the original, consumers felt that the taste of the original was below their expectations, causing a negative disconfirmation of expectations about it; and, as a consequence, consumers were less satisfied with the taste of the original.

FINAL DISCUSSION AND CONCLUSION

The competitive interplay between new entrants and incumbents drives the evolution of industries (Agarwal and Gort, 1996; Helfat and Lieberman, 2002; Henderson and Mitchell, 1997; McGahan, 2004; Mitchell, 1991). While incumbents lead the market with their original products, new entrants can catch up by imitating the originals (Kim and Nelson, 2000; Nelson and Winter, 1982; Peteraf, 1993). In particular, new entrants can creatively imitate the originals by combining some of the original's attributes with their own unique attributes and attribute configurations. Such creative imitations are generally legal and have the

potential to seriously threaten the incumbents (Alchian, 1950; Kim and Nelson, 2000; Giachetti et al., 2017; Posen and Martignoni, 2018).

However, the quality of creative imitations is heterogeneous (Kim and Nelson, 2000; Schnaars, 1994; Yip and McKern 2016). The quality of some creative imitations is low because they downgrade and exclude attributes in order to offer a competitive lower price, and do a poor job of adding features. In contrast, other creative imitations reach moderate quality levels by using better components, keeping more features, and adding features that perform better. High-quality creative imitations can also emerge with quality components and features, and new innovative features that cater to domestic needs better than the original (Kim and Nelson, 2000; Schnaars, 1994; Yip and McKern, 2016).

In this research, the empirical context is creative imitation in China (Lindtner et al., 2015; Tse et al., 2009; Yip and McKern, 2016) and we focus on the low- and moderate-quality creative imitations which are most prevalent there (Tse et al., 2009; Yip and McKern, 2016). High-quality creative imitations are currently relatively rare in the Chinese marketplace due to economic and legal factors (Lindtner et al., 2015; Yip and McKern, 2016). Using both lab and field experiments, we find that a low-quality creative imitation can make the original look better than expected, an effect called positive disconfirmation of expectations, which can increase satisfaction with and choice of the original. On the other hand, adding a moderate-quality creative imitation to the retail choice

set can cause the original to look worse than expected, an effect called negative disconfirmation of expectations, which can lower satisfaction with and choice of the original. By showing these effects, we extend the literature on the competitive effects of creative imitation on the originals. Also, our analyses demonstrate that, in violation of the fundamental economic principle of regularity of choice (Huber et al., 1982; Luce, 1977), adding a low-quality creative imitation to a retail choice set can actually increase choice of the original. Moreover, we demonstrate the threat of a moderate-quality creative imitation with innovative features that cater to the domestic market. It can diminish satisfaction with the original and threaten the original's future viability.

While our empirical context is creative imitation in China, our findings have broader implications because creative imitation has been observed across many countries, historical eras, and industries. US, Japanese, and Korean firms engaged in creative imitation when they were undergoing their initial economic development (Chang, Chung, and Mahmood, 2006; Cho, Kim, and Rhee, 1998; Kim, 1997, 1998; Lee and Lim, 2001; Yamamura, Sonobe, and Otsuka, 2005). For example, Francis Cabot Lowell, the American, studied British textile machines before developing his own creative imitations that better fit his New England environment (Posen and Martignoni, 2018). Similarly, Japanese and Korean firms creatively imitated with automotives, semi-conductors, appliances, and machine tools before introducing their own major

innovations (Bolton, 1993; Cho et al., 1998; Kim and Nelson, 2000; Mansfield, 1988).

US and global firms still sell creative imitations in the United States and other developed economies, where they compete against original manufacturers, but the global economy is evolving. Where creative imitation is currently pervasive is in emerging economies such as China, Brazil, India, Mexico, the Philippines, and Turkey, because they lag behind in technological development (Grossman and Helpman, 1991; Knott et al., 2009; Sutton, 2014) and have more lenient regulatory and legal environments (Bartlett and Ghoshal, 2000; Chittoor et al., 2009; Kale and Little, 2007; Luo et al., 2011; Nijher, 2018; Phuc, 2015; Qin et al., 2018). Our research indicates that creative imitations merit attention from the original manufacturers because creative imitations change consumer perceptions of the originals depending on their relative quality levels, and so the firm's strategic response needs to adjust accordingly.

This research expands the stream of work that recognizes the beneficial effects that imitators can have, despite their typically negative competitive effects on the originals. Imitators can help the original firms establish their technologies as the industry standards (Givon, Mahajan, and Muller, 1995; Katz and Shapiro, 1985) and create positive network effects (Raustiala and Sprigman, 2009). Even counterfeit imitators can create positive advertising effects for high-end authentic products (Qian, 2014; Raustiala and Sprigman, 2009) or serve as trial versions before

consumers can purchase the authentic products (Gosline, 2009, 2010). At the industry level, imitation can help to preserve and diffuse useful product attributes (Posen, Lee, and Yi, 2013).

By revealing how creative imitations affect consumer perceptions of the originals, our work has practical implications for the producers of the originals. We suggest that original producers tailor their marketing and consumer strategies to take into account the different quality levels of creative imitations. Rather than considering all creative imitations as equal threats, the original producers should focus on taking measures against the moderate-quality creative imitations, while possibly cultivating temporary symbiotic relationships with the low-quality creative imitations (Brandenburger and Nalebuff, 1996; Mitchell, Dussauge, and Garrette, 2010; Turner, Mitchell, and Bettis, 2010). Interestingly, this approach is consistent with an ancient Chinese military strategy called “Yuan Jiao Jin Gong” (□□□□), in which a country befriends the distant enemy while attacking the nearby one.

Instead of exerting considerable efforts attempting to exclude all creative imitations from retail store shelves, the original producers may actually consider encouraging certain retailers to carry low-quality creative imitations. This strategy may benefit the originals, because most of the originals’ target consumers are unlikely to choose the low-quality creative imitations, even though they are cheaper. Meanwhile, viewing the low-quality creative imitations alongside the originals may strengthen

consumers' satisfaction with and intent to choose the originals. Of course, this does not mean that incumbents should ignore low-quality entrants entirely; they need to watch these entrants closely and take steps to ensure they will not become strong enough to become a threat in the long run. For instance, Korean cars used to be considered low-quality alternatives to American and Japanese cars. However, many of the Korean brands are now innovators that compete directly with the originals (Kim, 1997, 1998). Therefore, the strategy of temporarily tolerating low-quality creative imitations should be continually monitored.

By contrast, producers of the originals should make all-out efforts to combat moderate-quality creative imitations, which may not only harm sales of the originals but, more fundamentally, may damage customers' satisfaction with the originals. Hence moderate-quality creative imitations may threaten the long-term viability of the originals in emerging markets where growing middle classes of consumers are deciding between them and the originals. This fundamental threat, unfortunately, is often a blind spot for Western original manufacturers who are selling in emerging markets (Prahalad and Bettis, 1986), because they are used to working with large chain stores that generally do not carry creative imitations and instead cater to the original manufacturers.[2]

Our research has some limitations, which suggests opportunities for further work. We did not study high-quality creative imitations,

[2] Chinese creative imitations reportedly account for a substantial decline of Apple's mobile phone market share in China (https://www.wsj.com/articles/apple-loses-ground-to-chinas-homegrown-rivals-11546524491).

because this type of product is not yet prevalent in China, though the situation could change if more Chinese firms are able to climb the quality ladder. Also, we did not study illegal counterfeits; we focused on legal creative imitations because they can be sold by legitimate retailers alongside the originals. Future work could extend our work by examining high-quality creative imitations and illegal counterfeits.

Another limitation of our work is that we focused on two product categories, electronics and beverages, and we concentrated on China. Future research could test the generalizability of our findings in other product categories, such as apparel and cosmetics, and in other countries where creative imitation is also common. Also, while our experiments help identify the process mechanisms that can explain the effects of creative imitations on consumer perceptions of the originals, whether these mechanisms are manifest in large-scale secondary datasets remains to be explored. Moreover, we examined conditions where only one or two alternative products were available. Since consumer choice can be influenced by choice set size (Iyengar and Lepper, 2000), researchers could examine larger choice sets involving multiple creative imitations along with the original.

Conclusions

The marketplace is replete with new entrants that imitate incumbents, and some of these entrants are creative imitations that not only copy features but also change features to cater to domestic needs.

The strategy of creative imitation is especially pervasive in China, which is not only a developing economy whose legal and regulatory frameworks are lenient toward imitation, but also the world's leading manufacturer, so abundant opportunities exist to copy and creatively alter the incumbent's designs. Our research indicates that the retail display of low-quality creative imitations actually benefits the originals. However, moderate-quality creative imitations pose a severe threat to the original manufacturers by showing how good they can be; and to combat this threat the original manufacturers should seek to bolster consumer satisfaction, not just lower their prices. While the generalizability of our findings to other settings depends on specific contingencies, our research helps lay the groundwork for future research to examine the effects of creative imitations in actual marketplace settings.

REFERENCES

Agarwal R, Gort M. 1996. The evolution of markets and entry, exit, and survival of firms. *The Review of Economics and Statistics* **78**(3): 489–498.

Agnihotri A. 2015. Low-cost innovation in emerging markets. *Journal of Strategic Marketing* **23**(5): 399–411.

Alchian AA. 1950. Uncertainty, evolution, and economic theory. *Journal of Political Economy* **58**(3): 211–221.

Alford BL, Biswas A. 2002. The effects of discount level, price consciousness, and sale proneness on consumers' price perception and behavioral intention. *Journal of Business Research* **55**(9): 775–783.

Anderson RE. 1973. Consumer dissatisfaction: The effect of disconfirmed expectancy on perceived product performance. *Journal of Marketing Research* **10**(1): 38–44.

Aribarg A, Arora N, Henderson T, Kim Y. 2014. Private label imitation of a national brand: Implications for consumer choice and law. *Journal of Marketing Research* **51**(6): 657–675.

Ariely D. 2010. *Predictably Irrational: The Hidden Forces That Shape Our Decisions.* HarperCollins: New York, NY.

Baldwin CY, Clark KB. 2000. *Design Rules: The Power of Modularity*. Cambridge, MA: MIT Press.

Bartlett CA, Ghoshal S. 2000. Going global: Lessons from late movers. *Harvard Business Review* **78**(2): 133–142.

Bettis RA, Helfat CE, Shaver JM. 2016. The necessity, logic, and forms of replication. *Strategic Management Journal* **37**(11): 2193–2203.

Bloemer J, Dekker D. 2007. Effects of personal values on customer satisfaction: An empirical test of the value-percept and expectation-disconfirmation model. *International Journal of Bank Marketing* **25** (5): 276–291.

Bolton, MK. 1993. Imitation versus innovation: Lessons to be learned from the Japanese. *Organizational Dynamics* **21**(3): 30–45.

Brandenburger AM, Nalebuff BJ. 1996. *Co-opetition.* Doubleday: New York, NY.

Burbano VC. 2016. Social responsibility messages and worker wage requirements: Field experimental evidence from online labor marketplaces. *Organization Science* **27**(4): 1010–1028.

Chang SJ, Chung CN, Mahmood IP. 2006. When and how does business group affiliation promote firm innovation? A tale of two emerging economies. *Organization Science* **17**(5): 637-656.

Chittoor R, Sarkar MB, Ray S, Aulakh PS. 2009. Third-world copycats to emerging multinationals: Institutional changes and organizational transformation in the Indian pharmaceutical industry. *Organization Science* **20**(1): 187–205.

Cho DS, Kim DJ, Rhee DK. 1998. Latecomer strategies: Evidence from the semiconductor industry in Japan and Korea. *Organization Science*, **9**(4): 489–505.

Clarkson G, Toh PK. 2010. 'Keep out' signs: The role of deterrence in the competition for resources. *Strategic Management Journal* **31**(11): 1202–1225.

Commuri S. 2009. The impact of counterfeiting on genuine-item consumers' brand relationships. *Journal of Marketing* **73**(3): 86–98.

Csaszar FA, Laureiro–Martínez D. 2018. Individual and organizational antecedents of strategic foresight: A representational approach. *Strategy Science* **3**(3): 513–532.

Csaszar, FA, Siggelkow N. 2010. How much to copy? Determinants of effective imitation breadth. *Organization Science* **21**(3): 661–676.

Dhar SK, Hoch SJ. 1997. Why store brand penetration varies by retailer. *Marketing Science* **16**(3): 208–227.

Elfenbein DW, Knott AM, Croson R. 2017. Equity stakes and exit: An experimental approach to decomposing exit delay. *Strategic Management Journal* **38**(2): 278–299.

Ethiraj S, Zhu DH. 2008. Performance effects of imitative entry. *Strategic Management Journal* **29**(8): 797–817.

Euromonitor International. 2017. *RTD Tea in China – Datagraphics.*

Evangelidis I, Van Osselaer SM. 2018. Points of (dis)parity: Expectation disconfirmation from common attributes in consumer choice. *Journal of Market Research* **55**(1): 1–13.
Giachetti C, Lampel J, Li Pira, S. 2017. Red queen competitive imitation in the U.K. mobile phone industry. *Academy of Management Journal* **60**(5): 1882–1914.
Givon M, Mahajan V, Muller E. 1995. Software piracy: Estimation of lost sales and the impact on software diffusion. *Journal of Marketing* **59** (1): 29–37.
Gosline R. 2009. *Simultaneous Distinction, Democratization and Omnivorism Effects: A Longitudinal Analysis of Dynamic Symbolic Boundaries in Counterfeit Consumption Networks*. Dissertation, Harvard Business School.
Gosline R. 2010. Counterfeit Labels: Good for Luxury Brands? *Forbes*. http://www.forbes.com/2010/02/11/luxury-goods-counterfeit-fakes-chanel-gucci-cmo-network-renee-richardson-gosline.html [25 January 2018].
Grossman G, Helpman E. 1991. Quality ladders in the theory of growth. *Review of Economic Studies* **58**(1): 43–61.
Harmon DJ, Kim PH, Mayer KJ. 2015. Breaking the letter vs. spirit of the law: How the interpretation of contract violations affects trust and the management of relationships. *Strategic Management Journal* **36**(4): 497–517.
Hayes AF. 2013. *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression–Based Approach.* Guilford Publications: New York, NY.
Helfat, CE, Finkelstein S, Mitchell W, Peteraf M, Singh H, Teece D, Winter S. 2007. *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Blackwell: Malden, MA.
Helfat CE, Lieberman MB. 2002. The birth of capabilities: Market entry and the importance of pre-history. *Industrial and Corporate Change* **11**(4): 725–760.
Henderson R, Mitchell W. 1997. The interactions of organizational and competitive influences on strategy and performance. *Strategic Management Journal* **18**(Summer Special Issue): 5–14.
Hennessey W. 2011. Deconstructing Shanzhai-China's copycat counterculture: Catch me if you can. *Campbell Law Review* **34**: 609–660.
Hoetker G, Swaminathan A, Mitchell W. 2007. Modularity and the impact of buyer–supplier relationships on the survival of suppliers. *Management Science* **53**(2): 178–191.
Huber J, Payne JW, Puto C. 1982. Adding asymmetrically dominated alternatives: Violations of regularity and the similarity hypothesis. *Journal of Consumer Research* **9**(1): 90–98.
Huber J, Puto C. 1983. Market boundaries and product choice: Illustrating attraction and substitution effects. *Journal of Consumer Research* **10**(1): 31–44.
Iyengar SS, Lepper MR. 2000. When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology* **79**(6): 995–1006.
Kale D, Little S. 2007. From imitation to innovation: The evolution of R&D capabilities and learning processes in the Indian pharmaceutical industry. *Technology Analysis and Strategic Management* **19**(5): 589–609.
Katz ML, Shapiro C. 1985. Network externalities, competition, and compatibility. *American Economic Review* **75**(3): 424–440.
Kim L. 1997. *Imitation to Innovation: The Dynamics of Korea's Technological Learning*. Harvard Business School Press: Boston, MA.
Kim L. 1998. Crisis construction and organizational learning: Capability building in catching-up at Hyundai Motor. *Organization Science* **9**(4): 506–521.
Kim L, Nelson R. 2000. Introduction: Technology and industrialization in newly industrializing countries, in L. Kim and R. Nelson (Eds.) *Technology, Learning and Innovation: Experiences of Newly Industrializing Economies*. Cambridge, UK: Cambridge University Press, pp. 1–9.
Knott AM, Posen HE, Wu B. 2009. Spillover asymmetry and why it matters. *Management Science* **55**(3): 373–388.
Lai KKY, Zaichkowsky JL. 1999. Brand imitation: Do the Chinese have different views? *Asia Pacific Journal of Management* **16**(2): 179–192.
Laureiro–Martínez D. 2014. Cognitive control capabilities, routinization propensity and decision making performance. *Organization Science* **25**(4): 1111–1133.

Laureiro–Martínez D, Brusoni S. 2018. Cognitive flexibility and adaptive decision-making: Evidence from a laboratory study of expert decision makers. *Strategic Management Journal* **39**(4): 1031–1058.
Lee K, Lim C. 2001. Technological regimes, catching-up and leapfrogging: Findings from the Korean industries. *Research Policy* **30**(3): 459–483.
Lee RP, Zhou KZ. 2012. Is product imitation good for firm performance? An examination of product imitation types and contingency factors. *Journal of International Marketing* **20**(3): 1–16.
Leng X, Zhang M. 2011. Shanzhai as a weak brand in contemporary China marketing. *International Journal of China Marketing* **1**(2): 81–94.
Levinthal DA. 1997. Adaptation on rugged landscapes. *Management Science* **43**(7): 934–950.
Lieberman MB, Asaba S. 2006. Why do firms imitate each other? *Academy of Management Review* **31**(2): 366–385.
Lieberman MB, Montgomery DB. 1988. First-mover advantages. *Strategic Management Journal* **9**: 41–58.
Lindtner S, Greenspan A, Li D. 2015. Designed in Shenzhen: Shanzhai manufacturing and maker entrepreneurs. In *Proceedings of the Fifth Decennial Aarhus Conference on Critical Alternatives*. Aarhus University Press: Denmark: 85–96.
Lippman SA, Rumelt RP. 1982. Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *Bell Journal of Economics* **13**(2): 418–438.
Liu X, Xie Y, Wu M. 2015. How latecomers innovate through technology modularization: Evidence from China's Shanzhai industry. *Innovation* **17**(2): 266–280.
Luce RD. 1977. The choice axiom after twenty years. *Journal of Mathematical Psychology* **15**(3): 215–233.
Luo Y, Sun J, Wang SL. 2011. Emerging economy copycats: Capability, environment, and strategy. *Academy of Management Perspectives* **25**(2), 37–56.
Mansfield E. 1988. The speed and cost of industrial-innovation in Japan and the United States: External vs. internal technology. *Management Science* **35**(10): 1157–1168.
McGahan A. 2004. *How Industries Evolve: Principles for Achieving and Sustaining Superior Performance*. Harvard Business School Press: Boston, MA.
Mitchell W. 1991. Dual clocks: Entry order influences on incumbent and newcomer market share and survival when specialized assets retain their value. *Strategic Management Journal* **12**(2): 85–100.
Mitchell W, Dussauge P, Garrette B. 2010. Alliances with competitors: How to combine and protect key resources? *Creativity and Innovation Management* **11**(3): 203–223.
Mourali M, Böckenholt U, Laroche M. 2007. Compromise and attraction effects under prevention and promotion motivations. *Journal of Consumer Research* **34**(2): 234–247.
Nelson MR, McLeod LE. 2005. Adolescent brand consciousness and product placements: Awareness, liking, and perceived effects on self and others. *International Journal of Consumer Studies* **29**(6): 515–528.
Nelson R, Winter S. 1982. *An Evolutionary Theory of Economic Change*. Harvard University Press: Cambridge, MA.
Nijher J. 2018. This is a generation of copycats. *The Times of India* https://timesofindia.indiatimes.com/entertainment/punjabi/music/this-is-a-generation-of-copycats/articleshow/64273001.cms [28 October 2018].
Oliver RL. 1980. A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research* **17**(4): 460–469.
Oliver RL, DeSarbo WS. 1988. Response determinants in satisfaction judgments. *Journal of Consumer Research* **14** (4): 495–507.
Paquette D. 2018. Trump's trade war brings unexpected boom for knockoff designer bags from China. *The Washington Post*. https://www.washingtonpost.com/world/asia_pacific/an-unexpected-winner-from-trumps-trade-war-knockoff-designer-bags-from-china/2018/09/19/69d8fd80-b667-11e8-b79f-f6e31e555258_story.html?noredirect=on&utm_term=.ad38c871e23e [28 October 2018]

Pauwels K, Srinivasan S. 2004. Who benefits from store brand entry? *Marketing Science* **23**(3): 364–390.
Pechmann C, Ratneshwar S. 1992. Consumer covariation judgments: Theory or data driven? *Journal of Consumer Research* **19**(3): 373–386.
Peteraf MA. 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal* **14**(3): 179–191.
Phillips DM, Baumgartner H. 2002. The role of consumption emotions in the satisfaction response. *Journal of Consumer Psychology* **12**(3): 243–252.
Phuc, NH. 2015. Imitation and innovation in emerging countries: A conceptual framework for analysis. *Journal on Innovation and Sustainability* ***6***(1): 37–47.
Polidoro F, Toh PK. 2011. Letting rivals come close or warding them off? The effects of substitution threat on imitation deterrence. *Academy of Management Journal* **54**(2): 369–392.
Posen HE, Chen JS. 2013. An advantage of newness: Vicarious learning despite limited absorptive capacity. *Organization Science* **24**(6): 1701–1716.
Posen HE, Lee J, Yi S. 2013. The power of imperfect imitation. *Strategic Management Journal* **34**(2): 149–164.
Posen HE, Martignoni D. 2018. Revisiting the imitation assumption: Why imitation may increase, rather than decrease, performance heterogeneity. *Strategic Management Journal* **39**(5): 1350–1369.
Prahalad CK, Bettis RA. 1986. The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal* **7**(6): 485–501.
Qian Y. 2014. Counterfeiters: Foes or friends? How counterfeits affect sales by product quality tier. *Management Science* **60**(10): 2381–2400.
Qin Y, Shi L, Song L, Stöttinger B, Tan K. 2018. Integrating consumers' motives with suppliers' solutions to combat *Shanzhai*: A phenomenon beyond counterfeit. *Business Horizons* **61**(2): 229–237.
Ratneshwar S, Shocker AD, Stewart DW. 1987. Toward understanding the attraction effect: The implications of product stimulus meaningfulness and familiarity. *Journal of Consumer Research* **13**(4): 520–533.
Raustiala K, Sprigman C. 2009. The piracy paradox revisited. *Stanford Law Review* **61**(5): 1201–1225.
Reed, R, DeFillippi, R. 1990. Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review* **15**(1): 88–102.
Rodrik, D. 2017. *Straight Talk on Trade Ideas for a Sane World Economy*. Princeton University Press: Princeton, NJ.
Schnaars, S. 1994. *Managing Imitation Strategies: How Later Entrants Seize Markets from Pioneers.* The Free Press: New York, NY.
Shaked A, Sutton J. 1982. Relaxing price competition through product differentiation. *Review of Economic Studies* **49**(1): 3–13.
Shaked A, Sutton J. 1987. Product differentiation and industrial structure. *Journal of Industrial Economics* **36**(2):131–146.
Shapira Z, Shaver JM. 2014. Confounding changes in averages with marginal effects: How anchoring can destroy economic value in strategic investment assessments. *Strategic Management Journal* **35**(10): 1414–1426.
Shen J. 2013. Apple's Sales in China Jump 67% Last Quarter. http://www.chinadaily.com.cn/business/2013-01/25/content_16173754.htm [28 January 2018].
Shenkar O. 2010. *Copycats: How Smart Companies Use Imitation to Gain a Strategic Edge*. Harvard Business Review Press: Boston, MA.
Simonson I. 1989. Choice based on reasons: The case of attraction and compromise effects. *Journal of Consumer Research* **16**(2): 158–174.
Simonson I, Tversky A. 1992. Choice in context: Tradeoff contrast and extremeness aversion. *Journal of Marketing Research* **29**(3): 281–295.
Soberman, DA, Parker PM. 2006. The economics of quality-equivalent store brands.

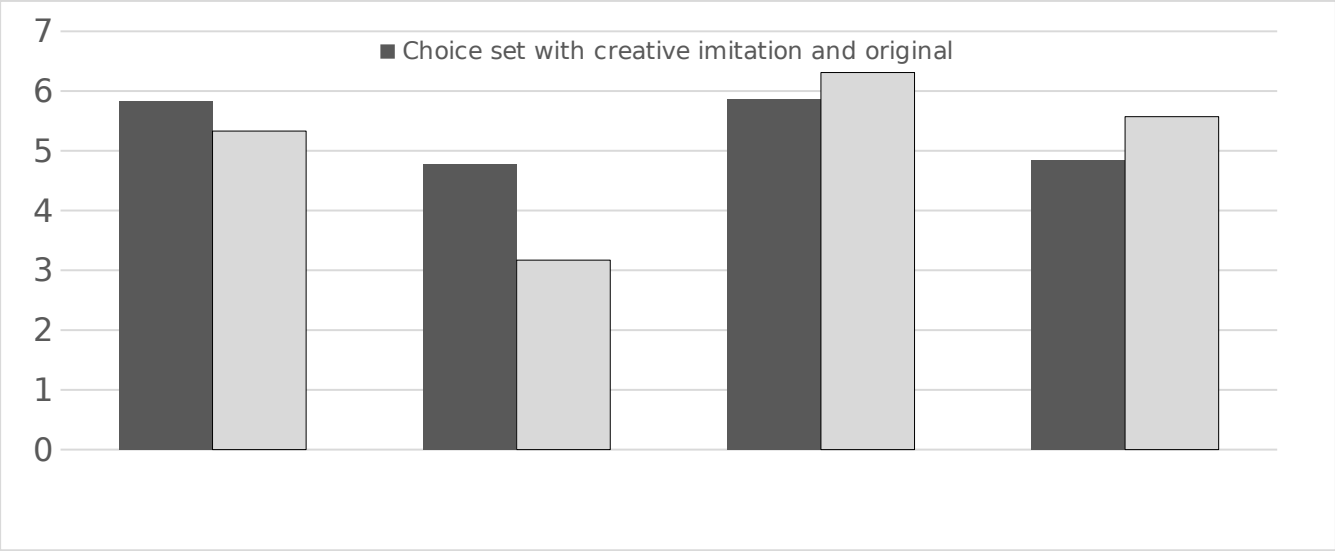
International Journal of Research in Marketing **23**(2): 125–139.
Somaya D. 2012. Patent strategy and management: An integrative review and research agenda. *Journal of Management* **38**(4): 1084–1114.
Spreng R, Chiou J. 2002. A cross-cultural assessment of the satisfaction formation process. *European Journal of Marketing* **36**(7/8): 829–839.
Sutton, J. 2014. *Competing in Capabilities: The Globalization Process*. Oxford University Press: Oxford, UK.
Tse E. 2010. *The China Strategy: Harnessing the Power of the World's Fastest-growing Economy.* Basic Books: Philadelphia, PA.
Tse E, Ma K, Huang Y. 2009. *Shan Zhai: A Chinese Phenomenon*. Booz and Company (Ed.).
Turner S, Mitchell W, Bettis R. 2010. Responding to rivals and complements: How market concentration shapes generational product innovation strategy. *Organization Science* **21**(4): 854–872.
van Horen F, Pieters R. 2012. When high-similarity copycats lose and moderate-similarity copycats gain: The impact of comparative evaluation. *Journal of Marketing Research* **49**(1): 83–91.
Warlop L, Alba JW. 2004. Sincere flattery: Trade-dress imitation and consumer choice. *Journal of Consumer Psychology* **14**(1 and 2): 21–27.
Wernerfelt B. 1991. Brand loyalty and market equilibrium. *Marketing Science,* **10**(3), 229–245.
Westbrook RA, Oliver RL. 1991. The dimensionality of consumption emotion patterns and consumer satisfaction. *Journal of Consumer Research* **18**(1): 84–91.
Wilcox K, Kim HM, Sen S. 2009. Why do consumers buy counterfeit luxury brands? *Journal of Marketing Research* **46**(2): 247–259.
Yamamura E, Sonobe T., Otsuka K. 2005. Time path in innovation, imitation, and growth: The case of the motorcycle industry in postwar Japan. *Journal of Evolutionary Economics* **15**(2):169–186.
Yip GS, McKern B. 2016. *China's Next Strategic Advantage: From Imitation to Innovation*. MIT Press: Boston, MA.
Zhu S, Shi Y. 2010. *Shanzhai* manufacturing – An alternative innovation phenomenon in China. *Journal of Science and Technology Policy in China* **1**(1): 29–49.

Table 1. Summary of experiments, participants, settings, product specifications, and results

Experiment	Participants and Settings	Product Specifications		Results	
		Original Products	**Creative Imitation Products**	**Choice Set: Original Alone**	**Choice Set: Original and Creative Imitation**
1	Chinese university students in a research lab	**Apple iPad** Model: A1219 (Wi-Fi) Price: 3,988 Yuan Main Features: 1024 x 768 screen A8 processor 16 GB storage Apple brand name	**Low-quality creative imitation** Price: 999 Yuan Added Feature: TF card port (micro-SD port) Inferior Features: 800 x 480 screen VIA8505 processor 2 GB storage	**Intent to choose the original: 3.17/7**	**Intent to choose the original:** With low-quality creative imitation: **4.77/7**
				Satisfaction with the original: **5.33/7**	**Satisfaction with the original:** With low-quality creative imitation: **5.83/7**
2	Real Chinese shoppers in a field setting; an electronics retail center in a medium-size city in China	**Apple iPhone 4** Model: A1332 Price: 4,600 Yuan Quality: 5.98/7 Main Features: A8 processor 512 MB RAM 16 GB storage Apple brand name	**Moderate-quality creative imitation** Price: 800 Yuan Quality: 3.54/7 Added Features: Extremely loud speakers 2 SIM card slots Inferior Features: MT6575 processor 128 MB RAM 4 GB storage	**Intent to choose the original: 5.57/7**	**Intent to choose the original:** With moderate-quality creative imitation: **4.85/7**
				Satisfaction with the original: **6.31/7**	**Satisfaction with the original:** With moderate-quality creative imitation: **5.86/7**
3	Real Chinese shoppers in a field setting; an electronics	**Same as Experiment 2**	**Low-quality creative imitation** Price: 600 Yuan Quality: 2.96/7 Added Feature:	**Daily unit sales of the original:** **2.9 units/day**	**Daily unit sales of the original:** With low-quality creative imitation: **3.8 units/day** With moderate-quality creative imitation: **1.9**

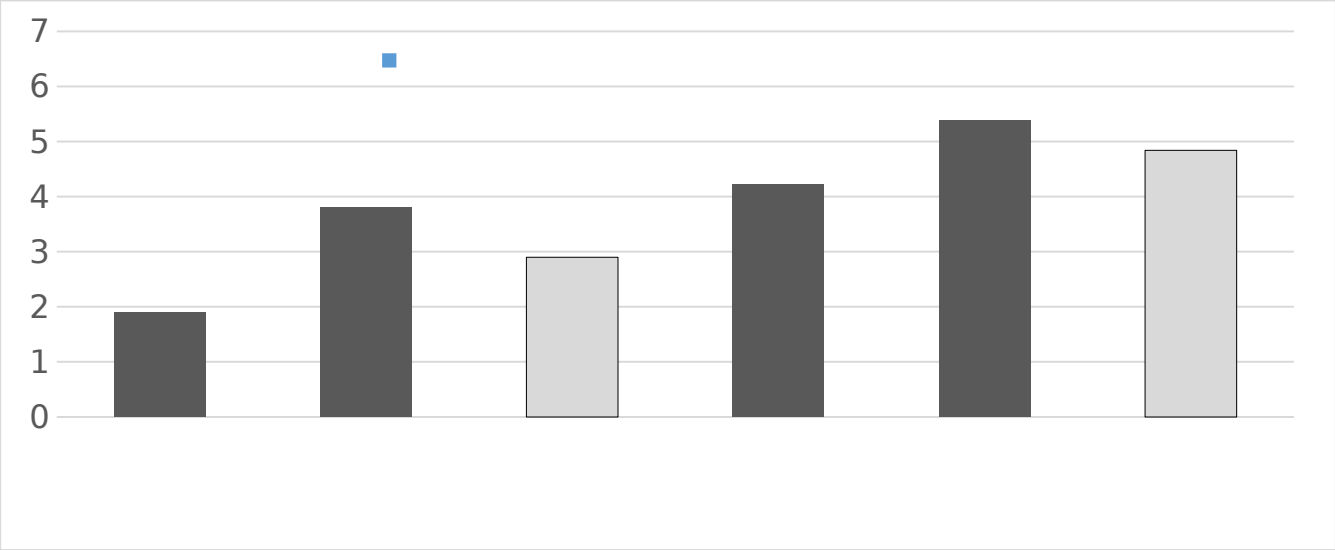
	retail center in a medium-size city in China		2 SIM card slots Inferior Features: MT6235 processor 64 MB RAM 512 MB storage Missing Features: Mute switch Sealed battery case **Moderate-quality creative imitation: same as Experiment 2**		**units/day**
4	Real Chinese shoppers in a field setting; an electronics retail center in a medium-size city in China	**Same as Experiment 2**	**Low-quality creative imitation** Same as Experiment 3 **Moderate-quality creative imitation** Same as Experiments 2-3	Experiment 4 did not include an original alone condition	**Satisfaction with the original:** With low-quality creative imitation: **6.28/7** With moderate-quality creative imitation: **5.89/7**
					Disconfirmation of expectations about the original: With low-quality creative imitation: **5.70/7** With moderate-quality creative imitation: **4.86/7**
5	Chinese university students in a research lab	**Kangshifu tea** Price: 3 Yuan Main Features: Ingredients: Water, sugar, high-quality natural tea leaves, salt, additives. Brand reputation: No. 1 brand of bottled tea nationally	**Low-quality creative imitation tea:** Price: 2 Yuan Quality: **1.65/7** Added Feature: Tea flavor additives Inferior Feature: Strong artificial taste Missing Feature: Tea leaves	**Satisfaction with the original:** **4.84/7**	**Satisfaction with the original:** With low-quality creative imitation: **5.38/7** With moderate-quality creative imitation: **4.22/7**
				Disconfirmation of expectations about	**Disconfirmation of expectations about the**

			Moderate-quality creative imitation tea: Price: 2.5 Yuan Quality: **3.98/7** <u>Added Feature:</u> Less sweet taste <u>Inferior Feature:</u> Much lower quality tea leaves	**the original: 4.16/7**	**original:** With low-quality creative imitation: **4.67/7** With moderate-quality creative imitation: **4.00/7**



Note: ** $p < .01$, * $p < .05$, ^ $p = 0.08$

FIGURE 1: Effects of creative imitation products on satisfaction with and intent to choose the originals observed in Experiments 1-2.



Note: ** $p < .01$, * $p < .05$, ^ $p = 0.10$

FIGURE 2: Effects of creative imitation products on daily unit sales of the original (Experiment 3) and satisfaction with the original (Experiment 5).

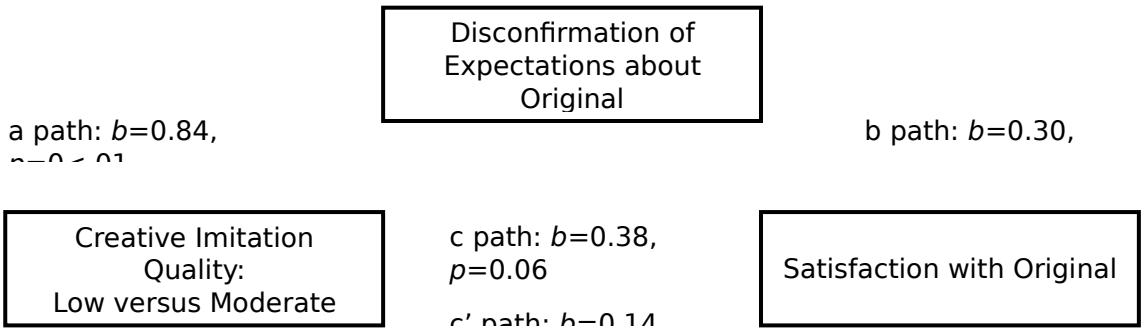
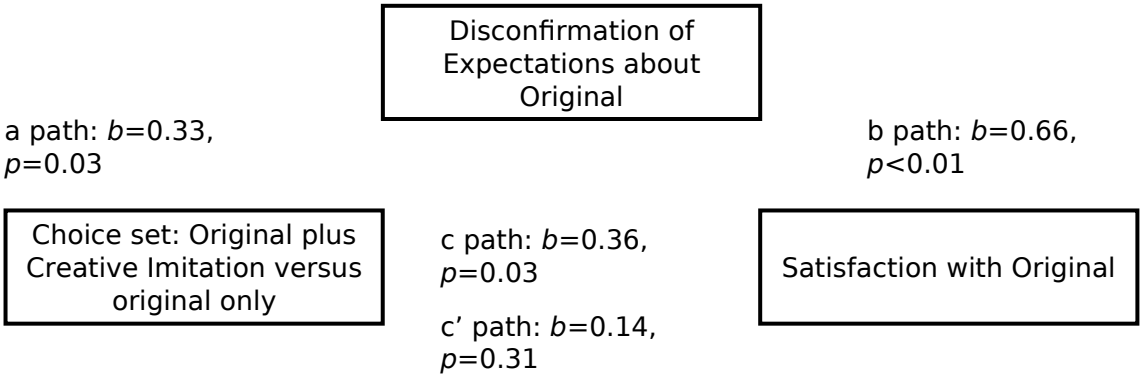
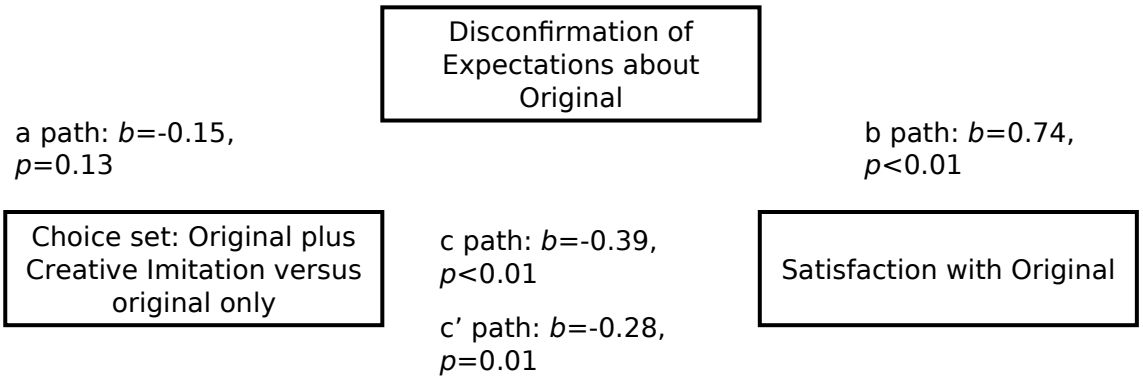


FIGURE 3: Disconfirmation of expectations about the original as a process mechanism observed in Experiment 4.



4A. Effects of a low-quality creative imitation product.



4B. Effects of a moderate-quality creative imitation product.

FIGURE 4: Disconfirmation of expectations about the original as a process mechanism observed in Experiment 5.