

CO-BRANDING PARTNER SELECTION: THE IMPORTANCE OF BELIEF REVISION

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Abstract: This paper applies the stereotype change theory to help bridge a major literature gap on co-branding partner selection: why both identical and highly different brand pairs often fail. We argue that, given that a primary goal of establishing a co-branding alliance is to positively revise consumers' beliefs about important attributes of the allying brands, the case of no belief-revision can lead to a failure of the alliance. We show that both an identical and a highly incongruent partnership in terms of attribute-level difference can fail due to the lack of belief-revision. We report that a moderately incongruent brand pair is a promising decision on co-branding partner selection. In doing so, our research contributes to the explanation of why the two "extreme" types of co-branding alliances may fail from the perspective of consumer evaluation. For brand managers, we offer a normative guideline for co-branding partner selection.

Keywords: belief-revision, co-branding, partner selection, stereotype change, book-keeping, sub-typing.

JEL Classification: M31.

Introduction

Co-branding, an entrepreneurial partnership in which two brands are presented together on a product or service, has been a popular topic in marketing research for over two decades, and is gaining increasing importance among practitioners (Lanseng, Olsen 2012). There are many real world examples of successfully co-branded products, but there are also numerous co-branding failures (e.g., the success of *Nike-Apple* sport kits, and the failure of *BenQ-Siemens* mobiles). However, academic research on co-branding success is rather scarce (Hadjicharalambous 2006), and marketing researchers have not yet identified clear factors, guidelines, or tools for selecting an ideal co-branding partner, the most critical issue to co-branding success (Cummings, Holmberg 2012).

Focusing on co-branding partner selection, Walchli (2007) reported that, under a high-involvement condition, the "moderately incongruent" co-brand receives the most posi-

tive attitudinal evaluation. Hence, from the attitudinal favourability perspective, we argue that the other two co-branding alliances, “identical” and “highly incongruent” pairs, turn out to be failures. Extant research (e.g., Park *et al.* 1996; Geylani *et al.* 2008) also found that the “moderately incongruent” pair may prompt consumers to revise their beliefs about the important attributes of the allying brands¹. In the following we call this process “Belief-Revision” (BR), whereby after the release of a co-branded product, consumers tend to develop the positive BR (i.e., belief enhancement; Loken, Roedder John 1993) for each of the allying brands.

In fact, consumers’ positive BR is a key factor for building and sustaining a successful co-branding partnership for two reasons. First, similar to the purpose of brand extension, for each brand partner, an important goal of co-branding is to strengthen existing attribute-beliefs about the brands and the associated brand images (Besharat, Langan 2014). Secondly, the positive BR of one brand in a co-branding alliance often results from the other’s positive attribute performance (Hillyer, Tikoo 1995; Ambroise *et al.* 2014). In the ideal case, the positive BR occurs for both brands if each brand excels in different attributes (Park *et al.* 1996). Thus, the positive BR mutually benefits brand partners; the larger the magnitude of BR, the better for each brand.

Given that consumers’ BR is an important motive for alliance formation, we argue that an alliance resulting in no BR can lead to a co-branding failure. From this perspective, we once again turn to Walchli’s (2007) findings to explain why the two “extreme” alliance types – “identical” and “highly incongruent” pairs – tend to fail. A better understanding of this unresolved problem is also crucial for marketers seeking successful brand partners. Wrong decisions regarding partner selection not only result in a failure of the co-branded product or service, but could also weaken the equities of the allying brands (Hadjicharalambous 2013).

Therefore, we explore why the two “extreme” alliances may fail by employing the stereotype change theory (Weber, Crocker 1983), a well-accepted theory that explains consumers’ cognitive process in BR (e.g., Sheinin 2000; Desai, Keller 2002). To the best of our knowledge, we are the first to apply the two competing models of stereotype change (i.e., the “book-keeping” and the “sub-typing” model) to explain why the two “extreme” cases can fail. In doing so, we also contribute to the growing literature on the key topic of belief enhancement and dilution (e.g., Luo *et al.* 2010). The remainder of this paper is organized as follows. Section 1 reviews the relevant literature. Section 2 presents three research propositions and the model, followed by the mathematical proofs of the propositions in Section 3. Section 4 finally shows the empirical results, ending with the conclusions.

¹ We use the terms “allying brands” and “partnering brands” interchangeably to represent the partners (e.g., *Sony* and *Ericsson*) participating in a co-branding partnership (e.g., *Sony-Ericsson*).

1. Literature review

1.1. Consumer-based evaluations for partner selection

A well-suited brand partner may significantly contribute to co-branding success via synergistic value (Rao, Ruekert 1994) as well as an increased value for an individual partner (see, e.g., Cao, Sorescu 2013). A comprehensive literature review reveals that marketing scholars have successfully used Consumer-Based Brand Equity (CBBE) as a measure to evaluate how a low- or a high-equity brand chooses its partner (e.g., Washburn *et al.* 2000; Besharat 2010; Kalafatis *et al.* 2012). The CBBE measures the psychological brand value in terms of consumers' attitudes, brand associations, and brand images (Keller 1993). Therefore, in the following, we employ a core unit of CBBE (Na *et al.* 1999), namely the consumers' perceived attribute-level (i.e., attribute-belief), as the main measure of the partner selection decision. Attribute-belief is an important component of CBBE (Winchester, Romaniuk 2008), and is connected with the brand image and associations, the key dimensions of CBBE (Keller 1993). Prior research has already unveiled how each brand partner can achieve a positive change-in-belief rating for important attributes (i.e., positive BR), and how a positive BR can lead to a positive change in brand images and associations (e.g., Park *et al.* 1996; Hillyer, Tikoo 1995; James 2005; Geylani *et al.* 2008; Van der Lans *et al.* 2014). However, an explicit use of attribute-belief for evaluating co-branding partner selection has not yet been reported in the relevant literature. By closing this gap, we contribute to a better understanding of the underlying reasons behind the CBBE changes (cf. Pappu *et al.* 2005).

However, a crucial problem of the CBBE measure is the inevitable subjectivity of respondents (Davcik *et al.* 2015). A contemporary way of solving this problem is to use a broader construct than CBBE (Davcik *et al.* 2015). For instance, one might combine CBBE with the Brand Value Co-Creation model (BVCC) (e.g., Merz *et al.* 2009), which is rooted in both the brand community theory (e.g., Muniz Jr. *et al.* 2001) and the service brand concept (e.g., Brodie *et al.* 2006). The use of BVCC can enhance the dynamic and interrelated influences of various stakeholders (e.g., employees and brand communities) on brand value. However, we use only the CBBE measure for three reasons. First, it is difficult to integrate both constructs in one study, because BVCC and CBBE are grounded in different theories. Furthermore, by using an integrated measure with BVCC, we can easily lose our focus on the consumer perspective, which is the mainstream view in co-branding research. Thirdly, this paper explores the static changes (i.e., pre-post differences) in consumer evaluations rather than the dynamic influences of stakeholders.

1.2. A major cause of belief revision: between-partner fit

Attribute-belief is also considered an important element of consumers' attitudinal evaluation (e.g., Fishbein, Ajzen 1975; Lichtenthal, Goodwin 2006). Research in consumer psychology, among others, explores how one brand achieves a favorable attitudinal evaluation of a co-brand by selecting the most appropriate partner (Leuthesser *et al.* 2003). In other words, from an attitudinal viewpoint, the level of perceived between-

partner fit is a crucial factor of co-branding success. For example, Park *et al.* (1996) showed that attribute-complementarity, that is, a good product-fit (e.g., one brand has an exceptional flavor but is high in calories, and the other has opposite features), creates a good attribute profile that prompts consumers to form a more favorable attitude toward this type of co-branding alliance than others. Simonin and Ruth (1998) reported that a more favorable attitude toward the co-brand occurs only when the alliance exhibits a good brand-fit. Cao and Sorescu (2013), Lee *et al.* (2013), and Van der Lans *et al.* (2014) also postulated a good brand-fit to be a key factor of co-branding success. Based on the congruence theory (Meyers-Levy, Tybout 1989), Walchli (2007) analyzed how between-partner congruency affects consumer evaluations of the co-brand. The author reported that:

- (1) under a high-involvement processing condition, a brand alliance with a moderate difference (e.g., *Business Week* and *The Wall Street Journal*) leads to a more favorable evaluation, and
- (2) a complementary but highly-incongruent brand partnership (e.g., *Business Week* and *People*) receives a negative evaluation, and
- (3) consumers usually regard an identical brand pair (e.g., *Business Week* and *Fortune*) as a redundant and non-complementary pair.

Walchli (2007) concluded that the perceived incongruence between two allying brands should not exceed a certain level. In sum, the above-mentioned studies explain the influences of different between-partner fits on attitudinal changes. As attribute-belief is considered a core unit of consumers' attitudinal evaluation, we argue that BR is also crucial to a firm's partner selection decision.

To the best of our knowledge, Hillyer and Tikoo (1995) is a seminal piece in explaining the impact of between-partner fit on changes in the attribute-belief level (i.e., BR). They found that consumers' beliefs regarding the perceived attribute-level of the secondary brand (e.g., the beliefs about the attribute-level of the attribute, "entertainment", with *Ericsson* in the *Sony-Ericsson* alliance) may be influenced by the beliefs of the "first" brand (e.g., the beliefs about the attribute-level of "entertainment" with *Sony*)². Under the attribute-complementarity setting, Geylani *et al.* (2008) used a connectionist model of brand associations (Janiszewski, van Osselaer 2000) to formulate the underlying process of BR. They found that consumers' attribute uncertainties about one brand may be transferred to the other brand through a co-branding alliance. Additionally, they reported that the difference between the partnering brands in terms of perceived attribute performance levels (i.e., attribute-belief) decreases through an alliance. Therefore, it may be better for one brand to partner with a brand that is perceived as having only moderately higher performance. Following Geylani *et al.* (2008), Lee and Decker (2009) confirmed the success of a moderately different pair. In summary, current findings on BR reveal a significant gap because they do not explain why the two "extreme" pairs may fail.

² The use of the terms "attribute" and "attribute-level" in this research is similar to the use in the conjoint analysis.

2. Propositions and model setting

Next, we develop three propositions and a mathematical model to gain a better understanding of partner selection decisions. Moorthy (1993) postulated that marketing researchers can use a theoretical and mathematical modeling approach to help managers identify key decision variables first, and then take a more general perspective when the decision-making environment changes (e.g., Miklos-Thal 2012). Therefore, we build our considerations on theory-driven propositions, and then employ a mathematical approach for proving them. We use the two models of stereotype change, namely the “book-keeping” (e.g., Sheinin 2000) and the “sub-typing” model (e.g., Vaidyanathan, Aggarwal 2000), to show the absence of BR can lead to a failure in the above-mentioned “extreme” pairs, because researchers have successfully utilized these two models to explore the cognitive processes of BR in branding research (e.g., Loken, Roedder John 1993; Desai, Keller 2002).

2.1. Propositions

The book-keeping model assumes that, in the co-branding context, the perceived “new” attribute information concerning the co-brand causes the consumers to modify previous attribute-beliefs regarding the allying brands, and the magnitude of BR is determined by the amount of disconfirming attribute information. Accordingly, the book-keeping model suggests that the amount of incongruent attribute information positively influences the magnitude of BR. The resulting proposition reads as follows:

Proposition 1 (The case of identical brands)

From the consumer evaluation perspective, under the book-keeping model, a brand benefits by not forming an alliance with an identical brand (partner) in terms of attribute-level difference.

Note that a completely “identical” pair of brands is difficult to find in reality because of the obvious drawbacks from the lack of attribute-complementarity (Park *et al.* 1996). However, the identical case remains important for further and advanced discussions (e.g., Van der Lans *et al.* 2014). According to Walchli (2007), the logic behind Prop. 1 is that consumers consider such a brand pair redundant and thus are not interested in it. As a result, consumers do not update their attribute beliefs. In our illustration, we argue that the partnering brands have no incentive to form an alliance since it would not result in the significant positive BR. This proposition motivates why an identical alliance can lead to a failure. The hypothetical *Business Week* and *Fortune* co-branded magazine (both featuring the attribute of timely business news) and the hypothetical *Asus-Acer* co-branded laptop (both featuring the attribute of free-from-defects) are typical examples of this scenario.

In contrast to the book-keeping model, the sub-typing model assumes that consumers’ perceived new attribute information from the co-brand does not always change their established attribute-beliefs about the allying brands. Here, the amount of incongru-

ent attribute information may have a negative impact on BR. We specify the second proposition as follows:

Proposition 2 (The case of highly incongruent brands)

From the consumer evaluation perspective, when sub-typing is in effect, it is better for a brand not to ally with a complementary brand that exhibits a huge attribute-level difference.

According to Walchli (2007), in this scenario, consumers may become frustrated when resolving the high discrepancy between the two brands, and will thus have no inclination to revise their attribute-beliefs about the allying brands. As a result, the partnering brands do not gain from this co-branding partnership. Hypothetical examples corresponding to this scenario could be the *Filofax-Calvin Klein* personal organizer (featuring a significant difference regarding the attribute “well-organized”), the *Business Week* and *People* co-branded magazine (Walchli 2007), or the *Evian-Vanish* stain remover (featuring a significant incongruence regarding the attributes “purity” and “cleanness”).³

Proposition 3 (The case of moderately incongruent brands)

From the consumer evaluation perspective, when either the sub-typing or the book-keeping model is in effect, a “moderately different” brand partner in terms of attribute-level difference would be the optimal choice.

According to Geylani *et al.* (2008), the “moderately incongruent” pair is considered a complementary set of attributes-levels. In this case, consumers would tend to process BR on the important attributes of the allying brands. The former co-brand, *Sony-Ericsson*, exemplifies how a positive BR may occur on the key attributes of each brand partner (e.g., the belief regarding the “entertainment” attribute of *Ericsson* may be enhanced after the co-branding alliance). Therefore, the two brands are motivated to partner with each other. This proposition, together with the above two, can help brand managers get a more holistic picture of the partner selection decision.

2.2. Model setting

In this subsection, we introduce a mathematical model to illustrate the process underlying BR in co-branding. Our model is motivated from Geylani *et al.* (2008). In contrast to their model, our work aims to explain why the two “extreme” brand pairs can fail by utilizing the stereotype change theory.⁴ Additionally, our mathematical notations present an intuitive graphical illustration of the BR process. In doing so, our model helps marketing managers, who are interested in co-branding activities, fully understand how the changes in attribute-belief affect consumers’ brand-choice decisions, particularly if the importance weight of the concerned attribute is high (cf. expectancy-value model,

³ This example is motivated from Keller (2007). The author mentioned that *Evian* (natural spring water) and *Johnson & Johnson* (cleaning products) may dilute the associations and consumers’ beliefs about the “purity” of *Evian*.

⁴ The mathematical setting of Geylani *et al.* (2008) focused mainly on how the attribute uncertainties of one brand could be transferred to the other one. However, to the best of our knowledge, they did not apply a theory for the partner selection decision.

e.g., Bass, Talarzyk 1972). The variables and parameters used in the model are defined as follows:

- i – index for time points; $i = 1, 2$;
- D – $D \in \{L, C\}$ = a set of brands;
- U – $U \in \{x, y\}$ = a set of product-related attributes;
- $P_{D(i)}$ – the product released by brand D at time i ;
- P_{LC} – the product released by the co-brand;
- $\Phi_{D(i)}$ – consumers' preference score for brand D at time i ;
- $\beta_{D(i)}^U$ – consumers' belief about attribute U of brand D at time i ;
- β_{LC}^U – consumers' belief about attribute U of the co-brand;
- d^U – initial (i.e., $i = 1$) attribute-level difference of attribute U ;
- w^U – consumers' relative weight of importance of attribute U ;
- λ_D^U – relative contributing weight of attribute U of brand D ;
- r_D^U – updating weight of attribute U of brand D ;
- Ω – a set of the consumer's attribute-beliefs about brand C .

We start from the assumption that the two brands, L and C , are potential partners in a co-branding alliance. Furthermore, we assume that these brands are differentiated by consumers' different attribute-beliefs. At time $i = 1$, each brand produces its own branded product, $P_{D(i)}$. At $i = 2$, the two brands have already cooperated with each other, and the co-branded product P_{LC} has already been released during the intermediate period. We further suppose that the considered market contains all the potential buyers of brands L and C (e.g., Venkatesh *et al.* 2000), and all these consumers have noticed the co-branded product during the intermediate period. Finally, we assume that consumers use two product-related attributes, x and y , to evaluate brands L and C .

Starting from this setting, we use the expectancy-value model (Bass, Talarzyk 1972) to formulate consumer preferences. The preferences at time i are formulated as a relative score composed of consumers' relative weights of attribute importance $w^U > 0$ and the attribute-beliefs $\beta_{D(i)}^U > 0$. Hence, the preference score of each brand, $\Phi_{D(i)}$, is expressed as:

$$\Phi_{D(i)} = \sum_U w^U \times \beta_{D(i)}^U. \quad (1)$$

Next, we will set up a geometric space that further details the BR process. This setting is consistent with a series of two-dimensional differentiation models (e.g., Lauga, Ofek 2011). We start with the specification of the consumer's initial (at $i = 1$) attribute-beliefs about the partnering brands (hereafter called *pre-alliance beliefs*). First, we establish a two-dimensional space (see Fig. 1), where the boundary of each attribute is given by the interval $[0, 100]$. We then plot attribute-beliefs at different time points. For example, at $i = 1$, if one consumer perceives brand L on level 60 for attribute x and on level 40 for y , then this consumer has a combined attribute-level pair of L : $(\beta_{L(1)}^x, \beta_{L(1)}^y) = (60, 40)$.

We further assume that the consumer perceives brand L (C) to perform well on attribute x (y), but not on y (x) at $i = 1$. (i.e., attribute-complementarity; Park *et al.* 1996). Therefore, $\beta_{L(1)}^x \geq \beta_{L(1)}^y$ holds true, and the consumer’s attribute-beliefs of L are located in the lower triangle BVZ of Figure 2. Besides, $\beta_{C(1)}^y \geq \beta_{C(1)}^x$ holds true, and the consumer’s attribute-beliefs of brand C appear in the upper triangle ETQ in Figure 3.

The consumer’s attribute-beliefs of C can be represented by the following set Ω :

$$\Omega = \left\{ \left(\beta_{C(1)}^x, \beta_{C(1)}^y \right) \in \mathbb{R}^+ \mid \beta_{C(1)}^y \geq \beta_{C(1)}^x ; \beta_{C(1)}^x \leq \beta_{L(1)}^x ; \beta_{C(1)}^y \geq \beta_{L(1)}^y \right\}. \quad (2)$$

In Equation (2), the first inequality, $\beta_{C(1)}^y \geq \beta_{C(1)}^x$, indicates that the consumer knows that C performs well on y but not on x . The second inequality, $\beta_{C(1)}^x \leq \beta_{L(1)}^x$, denotes that L is known for performing better than C on x . Finally, the third inequality, $\beta_{C(1)}^y \geq \beta_{L(1)}^y$, indicates that C performs better than L on y . The set Ω is plotted in Figure 4, represented by the upper pentagon $IJKMO$.

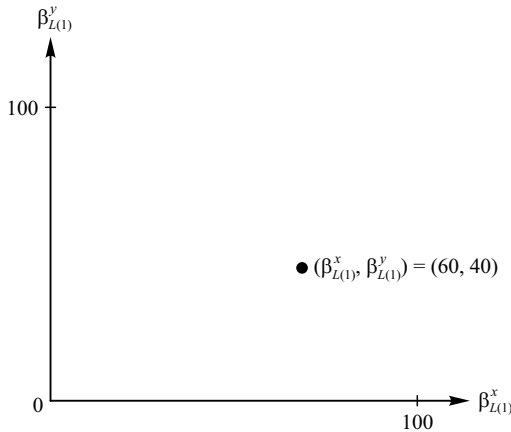


Fig. 1. The two-dimensional space of attribute-beliefs

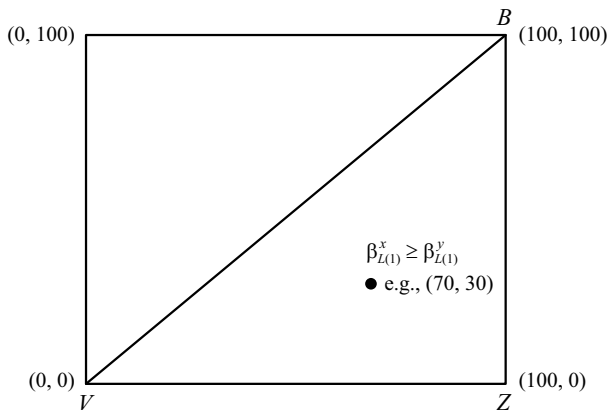


Fig. 2. The consumer’s pre-alliance beliefs about L

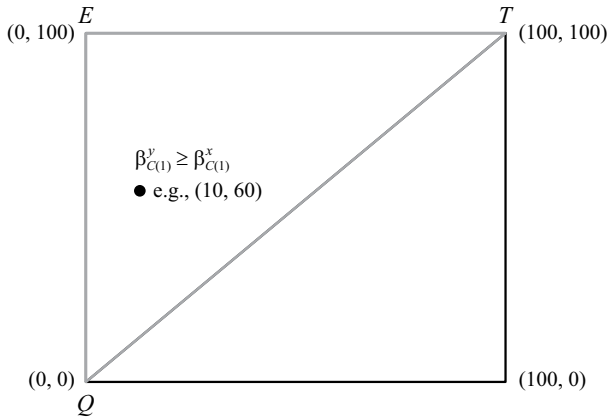


Fig. 3. The consumer's pre-alliance beliefs about C

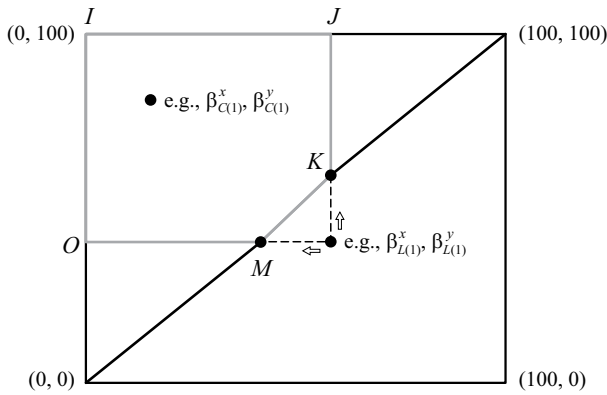


Fig. 4. The consumer's pre-alliance beliefs about L and C

We use d^U to denote the consumer's initial attribute-level difference of attribute U between L and C at $i = 1$ and define:

$$d^U = \left| \beta_{L(1)}^U - \beta_{C(1)}^U \right|, \text{ where } U \in \{x, y\}. \quad (3)$$

So, d^U is a continuous function of $\beta_{D(1)}^U$. We further assume that the difference is the same for the two attributes, i.e. $d = d^U$. This assumption is motivated by Geylani *et al.* (2008).

Now, we move to the consumer's beliefs about the co-branded product (hereafter called *co-branding beliefs*), and the post-alliance (at $i = 2$) beliefs about the allying brands (hereafter referred to as *post-alliance beliefs*). Again, as inspired by Geylani *et al.* (2008), we formulate co-branding beliefs and post-alliance beliefs about each brand as:

$$\beta_{LC}^U = \lambda_L^U \times \beta_{L(1)}^U + \lambda_C^U \times \beta_{C(1)}^U, \text{ where } \lambda_D^U \in [0, 1], \sum_D \lambda_D^U = 1, \text{ and } U \in \{x, y\}, \quad (4)$$

$$\beta_{D(2)}^U = r_D^U \times \beta_{LC}^U + (1 - r_D^U) \times \beta_{D(1)}^U, \text{ where } r_D^U \in [0,1], U \in \{x, y\}, \text{ and } D \in \{L, C\}. \quad (5)$$

In equation (5), r_D^U determines the magnitude of the consumers' BR.

3. Proof

By using the above specifications, Prop. 1 (Proposition 1) can be proved as follows⁵. First, we express the book-keeping model mathematically by the following equation:

$$(\partial r^U / \partial d) > 0, \text{ where } U \in \{x, y\}. \quad (6)$$

That is, we assume that the magnitude of the BR (r^U) changes positively with the difference of initial attribute-level between the two brands (d). We further assume that r^U has a lower bound, 0, and an upper bound, 1 (i.e., $r^U \in [0,1]$). We suppose further that $d \mapsto r^U(d)$ is an injective function (e.g., a monotonic function) with the one-one mapping property. Then, we can construct a sequence of d (represented by the set $\{d_1, d_2, d_3, \dots\}$) and a sequence of r^U (represented by the set $\{r_1^U, r_2^U, r_3^U, \dots\}$). In other words, each element of d 's sequence corresponds to the same order of each element of r^U 's sequence. Given that r^U is strictly monotonic increasing in d with the one-one mapping property, it can be observed that if $d = 0$, then r^U approaches its lower bound, 0.

It means that the magnitude of BR is zero when the two brands are identical in terms of the attribute-level difference. In conclusion, when book-keeping is in effect, the consumer may consider an identical pair ($d = 0$) to be redundant. Thus, no BR occurs ($r^U = 0$) (e.g., no changes of attribute-beliefs in Figures 2 and 3). Consequently, this leads to a failure of the alliance.

We now come to the proof of Prop. 2. We formulate the sub-typing model as follows:

$$(\partial r^U / \partial d) < 0, \text{ where } U \in \{x, y\}. \quad (7)$$

Equation (7) indicates that the magnitude of the BR changes negatively with the difference in the initial attribute-level between the two brands. We further assume that $r^U \in [0,1]$. Besides, we suppose r^U to be strictly monotonic decreasing in d (e.g., $r^U = 1/(d + 1)$). This formulation shows why a consumer has difficulties in resolving the high discrepancy between the allying brands. That is, in this case, r^U will reach its lower bound 0 when d approaches $+\infty$. In other words, when sub-typing is in effect, the consumer cannot resolve the large differences in the attribute-level between the two brands. Finally, no BR occurs (e.g., no changes in attribute-beliefs in Figures 2 and 3), and this alliance fails.

Note that Prop. 3 has already been proven by Geylani *et al.* (2008), and because the logic behind our proof would be similar to theirs, we can skip the proof here. However, different from Geylani *et al.* (2008), we provide this rule by applying the stereotype change theory. We argue that the “moderately apart” alliance will be accepted by consumers, who have either the book-keeping or the sub-typing mindset.

⁵ For the sake of comprehensibility, we analyze only the BR of one brand. Thus, hereafter, we drop index D .

4. Empirical study

4.1. Setting of the study

The empirical study in this section illustrates our theory-driven propositions in a real-world context. To align it with the context of our propositions, we have designed a survey based on a history of a hypothetical consuming experience (Geylani *et al.* 2008), and used two hypothetical brands of briefcases, namely *L* and *C*. The co-branded product of this simulated alliance, the *LC* briefcase, is the stimulus. Two attributes, style and durability (x and y in the mathematical model), are assumed to be the most important attributes when consumers evaluate a briefcase (e.g., Ahluwalia, Gurhan-Canli 2000). So, each of the two brands was manipulated with two histograms showing pre-alliance durability and style perceptions. Furthermore, we assumed that durability (style) is the salient attribute of *L* (*C*). We then manipulated the attribute salience in the histograms of the perceived durability and style scores rated by 100 users (Geylani *et al.* 2008).

To represent the identical case considered in Prop. 1, we set the perceived mean scores of durability and style of *L* (*C*) to be 97 (96) and 96 (97), respectively. That is, we assumed a very small initial attribute-level difference of attribute *U* between *L* and *C* (i.e., $d = 1$). Furthermore, to represent the highly different scenario of Prop. 2, we set the perceived mean scores of durability and style of *L* (*C*) to be 97 (4) and 4 (97), respectively (i.e., $d = 93$). Finally, to represent the moderately different case of Prop. 3, we let the perceived mean scores of durability and style of *L* (*C*) to be 65 (35) and 35 (65), respectively (i.e., $d = 30$). In the following, we regard the identical case as condition 1, the highly different case as condition 2, and the moderately different case as condition 3. Table 1 summarizes these conditions, and Figure 5 shows an example of the histogram manipulation for *L* in condition 3.

Table 1. Setting of the survey (the scores are out of 100)

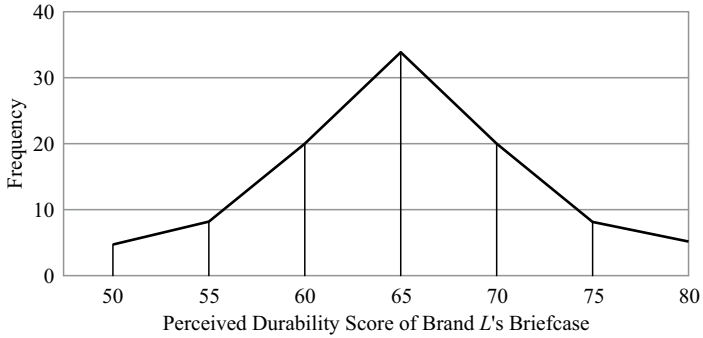
Condition	Perceived attribute-level of durability of <i>L</i>	Perceived attribute-level of durability of <i>C</i>	Perceived attribute-level of style of <i>L</i>	Perceived attribute-level of style of <i>C</i>
1. Identical	97	96	96	97
2. Highly different	97	4	4	97
3. Moderately different	65	35	35	65

Starting from these conditions the survey was structured as follows: the histograms showing the consumption experiences were presented to the respondents; their pre-alliance beliefs about *L* were measured by asking the following questions for both durability and style: “According to this histogram, you gave to brand *L*’s briefcase a durability [style] score of _.” (range: 0 to 100; cf. e.g., Geylani *et al.* 2008). The same questions were asked about brand *C*. Then, we presented an advertisement stimulus (cf. e.g., Simonin, Ruth 1998), which shows the message of the co-branding alliance (see Fig. 6).

Similar to Geylani *et al.* (2008), we asked the respondents to complete an unrelated filler task for approximately 10 minutes in order to clear their short-term memory of pre-

(1) Manipulation of “durability” of brand L

The supposed perceived durability scores of 100 users of brand L's briefcase are given below as a histogram



(2) Manipulation of “style” of brand L

The supposed perceived style scores of 100 users of brand L's briefcase are given below as a histogram

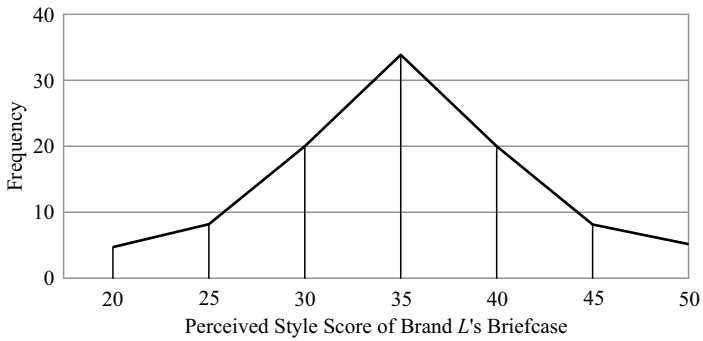


Fig. 5. Histogram manipulation of brand L in condition 3

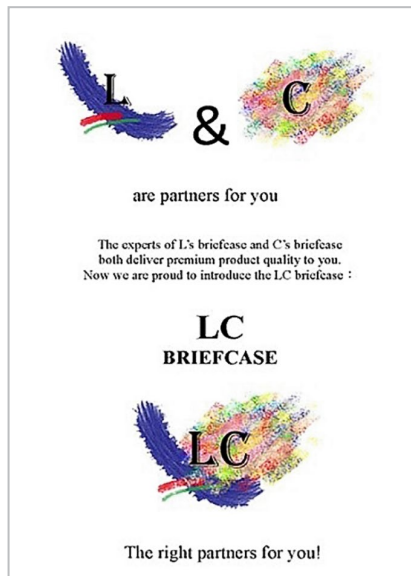


Fig. 6. The co-branding stimulus

alliance beliefs. Finally, to measure their post-alliance beliefs about brand *L*, we asked the respondents to answer the following questions for both durability and style: “After you have seen the co-branded briefcase, you would expect the durability [style] score of *L*’s briefcase to be $_$.” Analogous questions were asked about brand *C*.⁶ By obtaining answers to the above eight questions, we collected four pairs of data for measuring the magnitude of BR (r_D^U). Pair 1 (2) measured the pre-post attribute-level difference on “durability” (“style”) of brand *L*; pair 3 (4) measured the pre-post attribute-level difference on “durability” (“style”) of brand *C*. In particular, to prevent the positive and negative changes of the attribute-level from canceling each other out, we measured the magnitude of BR by using the absolute value of the pre-post attribute-level difference for each pair.

4.2. Hypotheses

To show the real-world applicability of our propositions, the survey data were used to test two hypotheses. The two hypotheses were motivated by Bandy *et al.* (1998) and Littlewood *et al.* (2001). In these studies, the participants’ pre-post difference, referred to as “gain scores”, were measured after a medical treatment (i.e., in our case, they were measured after the presentation of the co-branding alliance). The magnitudes of pre-post changes were then compared across different groups of participants. Because BR can be a crucial motive for building a successful co-branding alliance (i.e., the larger, the better; see the Introduction section), we used this empirical approach to test whether consumers would exhibit a larger magnitude of BR in the moderately different case (Prop. 3) than in the other two cases (Prop. 1 and 2). Therefore, Hypothesis 1 (Hypothesis 2) compares the four pairs of data entered in conditions 1 (2) and 3, and it postulates that a more significant BR occurs in condition 3 than in condition 1 (2). Hypothesis 1 (H1) and Hypothesis (H2) read as follows:

H1: The mean of the pre-post attribute-level differences in condition 3 (the moderately incongruent case) is larger than that in condition 1 (the identical case).

H2: The mean of the pre-post attribute-level differences in condition 3 (the moderately incongruent case) is larger than that in condition 2 (the highly incongruent case).

A total of 230 undergraduate students attending different lectures (namely Marketing Management, Introduction of Management, Fundamental Accounting, and English Literature) in a major university in Taipei participated in our survey⁷. The response rate was 84% (194 out of 230). Nineteen respondents misunderstood the directions of our survey and therefore were eliminated, leaving a final sample of 175 respondents. For H1 and H2, an independent sample mean *t*-test (two-tailed and assuming unequal variances) was performed to compare the equality of means of the absolute value of BR. Tables 2 and 3 present the result of H1 and H2, respectively. H1 is supported with respect to all four pairs (at a significance level $p = 0.05$); H2 is supported in three of four pairs ($p = 0.05$), and also in pair number 3, which approaches significance ($p = 0.059$).

⁶ Before the main survey, we conducted two pre-tests. The first assessed whether durability and style were important attributes of briefcases (9-point scale; $n = 49$); the second assessed whether the respondents understood how to read the exact counts in each histogram ($n = 57$).

⁷ We chose these classes because they were open to all the students across all academic departments.

Table 2. Results for hypothesis H1

H1				
Condition	1		3	
Sample size	63		60	
Pair	1	2	3	4
<i>t</i> value	-7.169	-11.974	-10.797	-6.838
<i>p</i> value	0.000**	0.000**	0.000**	0.000**

Note: ** = significant at the 0.05 level (two-tailed).

Table 3. Results for hypothesis H2

H2				
Condition	2		3	
Sample size	52		60	
Pair	1	2	3	4
<i>t</i> value	-6.926	-2.314	-1.918	-4.975
<i>p</i> value	0.000**	0.024**	0.059*	0.000**

Note: ** = significant at the 0.05 level, * = significant at the 0.10 level (two-tailed).

The empirical results support our two hypotheses and suggest that a larger degree of BR occurs in the moderately different case (Prop. 3) than in the other two scenarios. Based on our research findings, a “moderately different” brand partner would be the best choice in co-branding partner selection.

Conclusions

This paper has examined the impact of consumers’ Belief Revision (BR) on the co-branding partner selection decision. A comprehensive review of the relevant literature has revealed the lack of explanation for possible failures in the cases of identical and highly incongruent brand pairs. We argue that the positive BR is the main objective for co-branding partners; we have applied two models of stereotype change (namely “book-keeping” and “sub-typing”) to show that BR does not occur in the two “extreme” scenarios. Both our theoretical and our empirical findings support the notion that allying with a “moderately different” partner appears to be the best choice.

This research contributes to the co-branding field in three ways. First, to the best of our knowledge, we bridge the corresponding literature gap by explaining why the two “extreme” co-branding cases involve a significant risk. Secondly, we analyze consumer evaluations at the core of attitudinal evaluation – attribute-beliefs. Finally, we show that the mutual transfer of consumers’ perceptions about the allying brands can subsequently lead to BR.

We suggest that branding managers avoid the two “extreme” pairs. This recommendation is valid for firms seeking to form medium- or long-term partnerships. However, this recommendation does not apply to some retail co-branding alliances (e.g., *Subway* (fast-food restaurant) within *Walmart* (department store)), because, in these cases, the allying brands have a rather low interdependence. The purchase and consumption of each brand’s offerings are largely independent from each other; thus, the concepts of “incongruence” and “congruence” may have only a rather small influence on consumer evaluations.

Of course, this research has a few limitations. First, as already mentioned in Subsection 1.1, the subjectivity of respondents is a major weakness of the CBBE measure, and this weakness may trigger the use of an alternative measure in future studies (e.g., an integrated measure based on BVCC). In doing so, researchers can also include the influences of stakeholders on the co-branding alliance and on each of the partnering brands. For instance, future research could examine the impact of the stakeholders’ emotional involvement on brand value to obtain conclusive results. In this case, it might be fruitful to explore how a negative event of the essential role of a stakeholder (e.g., a front-line employee’s service failure) changes customers’ perceived brand value. The first step in this direction could be an adaption of the magnitude of BR in equation (5) for capturing the respective changes of perceived brand value after the incident. Another way to include the stakeholder influence could be via in-depth interviews with consumers, specifically to investigate how both brands’ communities affect each other. Secondly, our model can be further developed into a simulation approach for visualizing the underlying updating process in a dynamic fashion. Consumers’ attribute-belief at a specific time point is frequently formed by their previous knowledge of that attribute. By applying this approach, researchers can also observe consumers’ learning behavior regarding the attribute-beliefs in various time periods. Finally, future studies may perform an experiment by using psychological measurement scales of personal traits to examine the differences in the BR process between consumers with a book-keeping mindset and those with a sub-typing mindset.

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