Removing Negative Country Images: Effects of Decomposition, Branding, and Product Experience

ABSTRACT

This article reports two studies on how negative country images can be removed by investigating the effects of decomposing country image into component and assembly origins, as well as the effects of global branding and product experience. Study 1 examines the psychological mechanism consumers use when a country image is decomposed into component and assembly origins. Study 2 extends the effect of decomposing country image to the context of global brands and product experience. It was found that subjects do not seem to differ either in the psychological mechanism they use or in their confidence in evaluating a product which is "made in" a country versus a product which has its "components from" and "is assembled in" the same country. As hypothesized, the effect of country image was weakened when it was decomposed. A strong positive brand was found to override negative assembly origin effect. After the product experience, the component origin effect was also removed. These findings suggest that when manufacturers lower their production costs by globalizing their production lines, they may simultaneously benefit from having a positive product image.

David K. Tse
Wei-na Lee

The success of products from countries of low production costs in the marketplace seems to contradict implications derived from previous country image studies. In particular, country image studies (e.g., see review by Bilkey and Nes 1982, and later Johansson 1989) consistently confirm that negative country images adversely affect consumers' product evaluation. Whatever the underlying psychological mechanisms, whether halo (Johansson, Nonaka, and Douglas 1985), summary construct (Han 1989) and/or other psychological mechanisms (Hong and Wyer 1990), the consensus is that an unfavorable country image will negatively distort a consumer's product evaluation across product types (Han and Terpstra 1988) and cultures (Cattin, Jolibert, and Lohnes 1982). The effect of country image is salient even when it is paired with variables such as favorable global brand, reputable distribution outlets (Chao 1989), and product experience (Tse and Gorn 1993).

The implications from the marketplace, however, are quite different. Products from low production cost countries (which often have unfavorable country images) have been well accepted by consumers. These products range from basic household appliances such as telephones and toasters to high technology laser systems.

Submitted December 1992
Revised March 1993
May 1993

Vol. 1, No. 4, 1993, pp. 25-48
ISSN 1069-031X

What causes the discrepancy? One possibility is that developments in the marketplace seem to have outpaced existing country image studies. Products with multiple countries-of-origin are increasingly common. Household electronics may now contain components that are made in one country and assembled in another. These products are the direct result of growing trends toward global "production sharing" (see Hamel and Prahalad 1985; Kim and Kim 1984; Kim, Kim, and LeSage 1986) by manufacturers who design production lines across countries with different production costs (see Ghoshal 1987, Kogut 1985a, 1985b; Mascarenhas 1984). As a result, a product's country image is often decomposed.

As a first step in this direction, this article reports two studies that investigate a simple and common form of decomposition (see Kogut 1985a, 1985b): a product with its components manufactured in one country—component origin (CO)—and assembled in another—assembly origin (AO). Specifically, the two studies investigate the following issues:

First, what psychological mechanisms do consumers use to evaluate products of multiple countries-of-origin? Previous country-image studies have shown that subjects may use country image as a halo effect anchor, as a summary construct, or as a product attribute (e.g., Erickson, Johansson, and Chao 1984; Han 1989). When the country image is replaced by component and assembly origins, would the same psychological mechanisms be used?

Second, how would the country-of-origin effect be shared between the component and assembly origins? Would the effects be equally shared or would the effects be attribute specific?

Third, in designing a successful global production network, the firm needs to consider how to overcome negative country images. In the marketplace other product cues, including brand name and product experience, are readily available. These cues have been shown to affect how consumers evaluate products. With the country image decomposed, could a strong positive brand override negative component and/or assembly origins?

Finally, some recent papers suggest consumers' product perceptions may change dramatically after even a single experience with the product (see Hock and Deighton 1990). Accordingly, would product experience play a role in removing negative country images?

STUDY 1

A home stereo system was the product chosen for this study because it is common for firms in this industry to have their production and assembly plants in two separate countries. Stereo systems with components from Japan (and South Korea) and assembled in Japan (and South Korea) had external

credibility and, hence, reduced potential demand characteristics. Study 1 investigates (1) the underlying mechanism subjects used in evaluating component origin and assembly origin, and (2) whether one type of origin dominates the other in the product evaluation process.

Psychological Processes for Component or Assembly Origins

A number of psychological mechanisms have been suggested to explain country image effects. Two of them—halo effects and summary statistics—are of special relevance to the current study. Other explanations such as encoding, polarization, and cognitive elaboration (see Hong and Wyer 1989; 1990) are concerned with the order of product information presented and hence are not relevant.

CO as a Halo

Most previous studies (see review by Bilkey and Nes 1982; Johansson 1989) argued that consumers use the country images as a halo to infer their product evaluation. This resembles stereotyping processes, where the country image represents the cause of stereotyping that initiates cognitive and/or motivational biases in affecting the subsequent judgments. This effect can also be explained by impression formation (e.g., Dreben, Fiske, and Hastie 1979; Hamilton, Lawerence, and Leirer 1980; Srull 1981; Srull and Wyer 1990; see also Hong and Wyer 1989) where country image may activate concepts about the country. These concepts would then affect the interpretation of other product attributes: favorable (and unfavorable) concepts would elicit favorable (and unfavorable) evaluations on the other product attributes.

Country Image as a Summary Attribute

Faced with daily information overloads, consumers are known to process information by chunks as a heuristic to avoid detailed processing of each product attribute available. In evaluating product quality, for example, Johansson (1989) suggested that country-of-origin will likely be used in similar ways as brand names. This "summary statistics" argument is consistent with Hong and Wyers' (1989) heuristic hypothesis and Han's summary construct model (1989).

A number of studies try to specify the boundary conditions prescribing the operation of the above psychological mechanisms. For example, it is suggested that the more the consumers know about the product class—i.e., stereo systems—the more likely they may use country image information as a summary statistic, because with a lot of product information available, it would be more efficient to use country image as a symbol to represent (or summarize) sets of product attributes (see Johansson 1989). Thus chunking or the "summary statistics" effect may operate. If the consumers have little or no product information, country image may tend to act as a halo stimulating the general concepts about the country in the consumers' product evaluation process.

What happens when country-of-origin is replaced by component and assembly origins; that is, when "made in Japan" is replaced by "components from Japan and assembled in Japan"? How would the country image effects be changed? Depending on the psychological mechanisms operating, two alternative results may occur.

First, the effect would likely increase if the origins are used as halo effect anchors. For example, when a consumer evaluates a stereo system with "components from South Korea and assembled in South Korea" versus the same system "made in South Korea," there are *two* pieces, rather than *one* piece, of negative information available to the consumer. If both component and assembly origins operate as different halo anchors, this increase in the number of negative cues may magnify the impact of the "non-decomposed" country image. Furthermore, the consumer has to process two negative cues rather than one, so the process would likely be more involving and the process may also lead to higher confidence in their product evaluation.

The impact would remain the same if origin information acts as summary attributes. According to the chunking explanation, if country image is being used as a proxy for product quality, "made in Japan" would have the same impact as "components from Japan and assembled in Japan" because their *information content* is the same. As a result, the effect would not be magnified, nor would the consumers be more confident in their evaluation.

In this study, university students who generally have a good knowledge of stereo sound systems were recruited as subjects. Thus, we proposed that subjects would use component and assembly origin information as summary attributes. Accordingly, we hypothesize:

H1a: The effect of origin information would not be magnified when decomposed.

H1b: The subjects' confidence in product evaluation would not change when the origin information is decomposed.

Relative Influence of Component and Assembly Origins

The second issue relates to the relative impact of component and assembly origins. When the country image is decomposed, how would the magnitude of its impact be divided? Again, different inferences could be derived from whether the origin information is used as a halo or as a summary construct.

If the component and assembly origin information were used as halo anchors, the effects would likely be across the product attributes and divided somewhat equally between component and assembly origins. This is because consumers likely allocate the effects of the "non-decomposed" country image between the two influential anchors. As a result, a

reverse form of an equal weight information integration model may operate.

According to the summary construct explanation, the effect of different origin information would likely be attribute specific. This is because subjects perceive component (or assembly) origin information more related to a set of product attributes and hence use it as a proxy summarizing the evaluation along those attributes. For example, when consumers evaluate stereo sound systems, they may perceive differences in the system's quality due more to differences in output power, functions, and complexity (which may be more related to the component origin) rather than who assembles the system (that is, the assembly origin). If this is the case, component origin may have a relatively larger share of influence in subjects' evaluations of these constructs. This explanation agrees with the chunking process where the component and assembly origins are linked to different chunks of product information and thus act as proxies for different sets of product attributes. As discussed, since subjects would likely have a good knowledge of the product, it is likely that they would use the origin information as summary statistics. Thus we hypothesize:

H2: Component and assembly origin information would each influence evaluation of a specific sets of product attributes.

Subjects

Study 1 consisted of 134 university students enrolled in an undergraduate advertising course at a southwestern public university. The subjects were told that the experimenters were from the university's marketing department, and that the department regularly conducts consumer surveys on various products for a variety of firms. They were asked to evaluate a prototype of a stereo sound system that a local trading firm was considering importing. A stereo system consisting of a compact disc player, a tuner, and two speakers was chosen because of its relevance and interest to the subjects. As mentioned, it is common for firms in this industry to have their production and assembly plants in several countries, so that stereo systems with components from Japan (or South Korea) and assembled in Japan (or South Korea) had actual external credibility and hence may reduce possible suspicion by the subjects.[1]

Design

Component origin and assembly origin were manipulated as part of the product description on the questionnaire. Subjects were told that the stereo system consisted of a compact disc player, a tuner, and two speakers. To assess the effects of decomposing country images, subjects were placed randomly in each of the following six treatment groups:

1. Made in Japan
2. Made in South Korea
3. Components from Japan and Assembled in Japan
4. Components from Japan and Assembled in South Korea
5. Components from South Korea and Assembled in Japan
6. Components from South Korea and Assembled in South Korea

The first two groups used a conventional "non-decomposed" country image. The latter four treatment groups represented a two (component origin) by two (assembly origin) decomposed country image design. Two earlier tests were conducted to choose the countries used in the present study. Japan was chosen as the favorable country and South Korea was chosen as the less favorable country. The entire questionnaire was also tested prior to the main study.

Procedure

Subjects were asked to read the product description in which the component origin and assembly origin of the stereo system were identified. They then indicated on six types of 6-point bi-polar scales how they expected the stereo sound system to perform. The first scale included two performance-related items: (1) "performance likely to be very bad"/"performance likely to be very good;" and (2) "sound quality likely to be very bad"/"sound quality likely to be very good." The second type included two long-term related items: (1) "likely to break down after warranty expires"/"unlikely to break down after warranty expires;" and (2) "sound quality likely to deteriorate"/"sound quality unlikely to deteriorate." The third type included two social-related items: (1) "would not be proud to give as a gift"/"would be very proud to give as a gift;" and (2) "would not be proud to show my friends"/"would be proud to show my friends." The fourth was a purchase value scale that ranged from "bad value purchase (i.e., a bad buy)" to "good value purchase (i.e., a good buy)." The fifth type had three overall product evaluations items: (1) "dislike it very much"/"like it very much;" (2) "very bad quality"/"very good quality;" and (3) "workmanship likely to be very bad"/"workmanship likely to be very good." In addition, subjects also rated their confidence in the above evaluation in a six-point scale: "not confident at all"/"very confident."[2]

As a manipulation check, subjects were also asked to rate the likelihood that (1) Sony sound systems marketed in the United States are entirely made in Japan and (2) GoldStar sound systems marketed in the United States are entirely made in South Korea. Two 5-point scales were used: "very likely"/"very unlikely." Finally, socio-demographic data on age, sex, and family income were collected.

Checks

While the subjects were placed randomly in each of the six treatment cells, age, gender, and family income were used as independent variables in a discriminant analysis with treatment groups as the dependent variable. All the univariate F values were insignificant and only 17.2 percent of subjects were correctly classified. This suggests that subjects in different treatment groups were reasonably random. The multiple-item scales had reasonably high Cronbach alphas: .75, .82, .78, .85, and .91. Hence the multiple-item scales were summed in subsequent analysis while the "confidence" and the "purchase value" scales were analyzed by themselves.

Psychological Mechanism for Component and/or Assembly Origins

To understand the psychological mechanism subjects used in processing component and assembly origin information, the dependent measures were compared between those who were asked to rate "made in Japan" (and "made in South Korea") versus those were asked to rate "components from Japan and assembly in Japan" (and "components from South Korea and assembly in South Korea"). The data patterns were consistent: all the dependent measures showed that there were *no significant mean differences between the groups.*

As discussed, one would expect the subjects' evaluations to be *more* extreme (H1a) and *more* confident (H1b) if halo effects were the major psychological mechanism; and the *same* if origin information acted as summary constructs. The insignificant difference between "made in Japan" and "components from Japan and assembly in Japan" (and also the South Korean pair) confirmed H1a and H1b—that for familiar products, consumers would likely use the origin information as summary constructs. Since the information content of "made in Japan" and "components from Japan and assembly in Japan" (and also for the South Korean pair) are the same, the consumers would not rate them differently.

Study 1 (two by two design, plus two additional treatment groups) can also be analyzed as a two by two factorial experiment with the Japanese component and Japanese assembly, Japanese component and South Korean assembly, South Korean component and Japanese assembly, and South Korean component and South Korean assembly as the four treatment cells. Table 1 reports the results. Component origin and assembly origin were both significant in the "long term attribute" and the "overall evaluation," while their effects on the other measures were insignificant. When the Japanese component and Japanese assembly cell (and also South Korean component and South Korean assembly) was replaced by the Made-in Japan cell (and Made-in South Korea) the ANOVA results were the same. This further verifies that in this study subjects seem to use the same psychological mechanisms for processing the component origin and assembly origin information as for the "Made-in" information.

Table 1. Results of ANOVAs (F values) on Different Dependent Measures (Study 1)

Dependent Measures	Component Origin (C)	Assembly Origin (A)	CxA
Performance Attributes	3.07	1.46	.11
Long-Term Attributes	4.38*	3.88*	1.56
Social Attributes	2.57	3.82@	.53
Purchase Value	2.09	1.53	1.24
Overall Evaluations	6.91**	3.75@	.27
Confidence	1.50	.62	1.01

** - significant at .01; * - significant at .05; @ - significant at .06

Relative Influence of Component and Assembly Origins

What product attributes did component origin affect in this study? Table 1 reports that component origin was significant in both "long term attributes" and "overall evaluations." An examination of the means found subjects in the "component in Japan" group rated "long-term attributes" and "overall evaluations" significantly higher than those in the "component in South Korea" group. Assembly origin exerted a significant effect in "long-term attributes" but only a marginally significant effect on "overall evaluations." The order of the means was as expected: subjects in the "assembly in Japan" group rated the stereo higher than those in the "assembly in South Korea" group. By the size of the F values, it seemed that component origin exerts more influence than assembly origin, especially in the "overall evaluations." What is also interesting is that assembly origin exerted a marginally significant influence on "social attributes."

Support for H2, which stated that component and assembly origin information would each influence evaluation of a specific set of product attribute, was not strong. In fact, component and assembly origin seemed to have major overlaps in the attributes they affect (long-term attributes and overall evaluations), rather than each affecting a distinct set of attributes.

There are four implications. First, the findings from Study 1 suggest that when the CO is decomposed into component and assembly origins, the *scope of the CO effect remains the same* (that is, the same product attributes are affected), but the *magnitude of CO effect is reduced* between the component and assembly origins. Second, the findings do not suggest that component and assembly origin are attribute specific as some may expect. Third, the significance of the component and assembly origins suggest that even when the CO is decomposed, their effects are still significant in consumer product evaluation. Finally, the study provides some support for previous findings (e.g., Han 1989; Hong and Wyer 1988; and Johansson 1989)—that for subjects who are

familiar with the product, country image information is likely to be used as a summary construct.

STUDY 2

In the marketplace, other product cues such as (1) brand name, and (2) product trial are readily available and have been shown to affect product evaluations. Study 2 extends the concept of decomposing country image to global branding and product trial. Its main objective is to assess whether brand name and/or product experience could override the effects due to component (and assembly) origins.[3]

Effect of Brand and Its Interaction with Component (and Assembly) Origin Effect

Literature in consumer psychology has long established the importance of brand names in product evaluation (e.g., Jacoby, Olson, and Haddock 1971; Robertson 1987). The salience of brand has also been demonstrated in all previous country image studies (e.g., Han and Terpstra 1988; Tse and Gorn 1993). According to the impression formation literature, when given a specific brand name, a consumer would activate the brand's concept, which would color his or her perception of other product information. Hence we expect:

H3: Brand would exert a significant effect on subjects' product evaluation.

Will brand interact with component or assembly origins? The most interesting interaction is a strong brand name overriding a negative component and/or assembly origin. Previous studies have shown that even a strong favorable brand name *cannot totally remove* the effects of a negative country-of-origin (e.g., Han and Terpstra 1988; Tse and Gorn 1993). In this study such interactions may be possible. There are three reasons. First, the country-of-origin effect is now decomposed. A positive brand may be strong enough to override a negative component (or assembly) origin.

Second, the impression formation literature suggests the encoding process may be stronger along the brand name than along the component and/or assembly origin because the latter two would likely have weaker or less distinct concepts and hence be less readily activated (e.g., Bargh 1984; Kardes 1986; Sujan 1985).

Third, the order of presentation of information is known to affect its impact on product evaluation (e.g., Biehal and Chakravarti 1982; Dreben, Fiske, and Hastie 1979). A product's brand name, if presented first, may further reduce the effects of component and assembly origins. For example, when evaluating products in a store, consumers will usually be exposed to the brand (e.g., Sony) before they know which country produces its components and/or which country assembles the product. When the brand is presented first (as in this study), brand name would more likely activate its general concept and color the perception of the subsequent

product information including component and assembly origins. Hence it is hypothesized that:

H4: Brand would interact with component origin in such a way that a positive brand will reduce the negative effects due to unfavorable component origin.

H5: Brand would interact with assembly origin in such a way that a positive brand will reduce the negative effects due to unfavorable assembly origin.

Effect of Product Experience

There is an emerging interest in how consumption experience may affect consumer product evaluation (e.g., Hock and Deighton 1989). Previous product experience studies (e.g., Churchill and Surprenant 1982; Oliver 1980; Tse and Wilton 1988), using independent variables other than country image and brand name, found product experience to be a powerful independent variable which reduced (and at times removed) the pre-experience manipulations effects (e.g., Churchill and Surprenant 1982; Hoch and Ha 1986). In Study 2 these pre-experience manipulations include component origin, assembly origin, and brand name.

Component origin, assembly origin, and brand can be regarded as extrinsic quality cues. They would be used especially when intrinsic cues (e.g., performance) were not available (see Huber and McCann 1982; Jacoby, Olsen, and Haddock 1971; Olsen 1977). Before experiencing the product, the consumer may use such extrinsic cues (component origin, assembly origin, and brand) and other extrinsic cues (e.g., the appearance of the system) to form his/her expectations about how well the product will perform. The actual performance may deviate from these expectations, reducing the effects of these variables in the consumer's post-experience evaluation. If these cues are weak (in this study, the component and assembly origins) their effects on product evaluation may more likely be reduced by the experience than would be the case for a strong cue (in this study, the brand name). It is, therefore, hypothesized that product experience would significantly affect component origin effects (H6) and assembly origin effects (H7).

Design and Procedure

Study 2 employed a two (component origin) by two (assembly origin) by two (brand) by two (before and after product experience) design in which subjects were asked to evaluate a stereo sound system both before and after actual experience with the product. The first three were between subject treatments, and the product experience was a within subject treatment.

As in Study 1, a stereo sound system consisting of a compact disc player, a tuner, and two speakers was chosen as the product. Component origin and assembly origin were manipulated

as part of the product description on the first page of the questionnaire. Subjects were told that the stereo system consisted of a compact disc player, a tuner, and two speakers, and that it had components from Japan (or South Korea) and was assembled in Japan (or South Korea). Brand image was manipulated by using two established brands in the U.S. market. Based on the results of two prior tests, Sony was chosen as the positive brand while GoldStar was chosen as a less favorable brand. The rock and roll song used in the experiment had been evaluated by individuals similar to the student subjects in a prior test and found to be moderately favored.

The sample consisted of 178 students enrolled in six different sections of another undergraduate advertising course at the same southwestern public university. The subjects (without overlap to those in Study 1) were told that the experimenters were from the university's marketing department, and that the department regularly conducts consumer surveys on various products for a variety of firms. They would be evaluating a prototype of a stereo sound system that a local trading firm was considering importing. The subjects (approximately 30 students per section) were randomly assigned to the eight between-subject treatment groups.

Subjects were asked to read the product description where the brand name was first identified. Then the component origin and assembly origin of the stereo system were also identified. They also saw the sound system—its size, appearance, and color. They then indicated on six types of 6-point bi-polar scales how they expected the stereo sound system to perform. The first five types of scales—"performance," "long-term," "social," "purchase value," and "overall evaluations"—were the same as in Study 1. In addition, an observable attribute scale—"color very unappealing"/"color very appealing"—was included as a check against demand bias.

Subjects then listened to the pretested rock and roll song on the disc player. They then evaluated the system again on the same six types of scales described above. The post-experience section of the questionnaire also had two more "post-experience" 6-point scales: "very much worse than expected"/"very much better than expected;" and "very dissatisfactory performance"/"very satisfactory performance." They also responded to an open-ended question asking them to write down the reason(s) they evaluated the system the way they did.

It was expected that the independent variables would affect the dependent variables with one exception: the observable scale—"appealingness of color." It is felt that this attribute could be observed, and be relatively more objectively evaluated. This variable, hence, allowed the magnitude of demand bias to be investigated. If subjects "felt demanded" to give

effects due to the treatments, consistent effects of these treatments across all dependent measures would result, even on the "appealingness of color" measure. The absence of significant treatment effects on this measure would be evidence against demand bias.

Subjects' perceived importance of component origin, assembly origin, and other product attributes were also obtained using 6-point "not important at all"/"very important" scales. As a manipulation check, subjects were also asked to rate how much they agree that (1) Japan (and South Korea) produce high-quality stereo sound components; (2) products from Japan (and South Korea) are well built; and (3) Sony (and GoldStar) produce high- quality stereo sound systems. They responded on 5-point Likert scales ranging from "strongly disagree" to "strongly agree." Finally, socio-demographic data including age, sex, family income, self-rated interest in stereo systems, self-rated knowledge of stereo systems, stereo system ownership, and perceived ethnic group affiliation were collected. The entire procedure took 20 to 30 minutes.

Checks

No section effect was found on the five dependent measures (see Table 2 for the dependent measures). The effects of age, sex, family income, self-rated interest in stereo system, self-rated knowledge of stereo systems, stereo system ownership, and perceived ethnic group affiliation were tested through discriminant analysis with treatment groups as the dependent variable. All the univariate F values were insignificant, there was no significant discriminant function, and only 26.90 percent of the subjects could be correctly classified. This suggests that the subjects in different treatment groups are reasonably randomized. These seven personal characteristics were also used as covariates in a MANOVA using all seven types of dependent measures with the four treatments as independent variables. None of the covariates were significant; hence in subsequent analysis these personal characteristics were not included.

Subjects' scores on six 6-point belief statements were used as manipulation checks on each of the three treatments. Subjects perceived stereo sound systems from Sony (mean = 4.43, the higher the more favorable) to be significantly higher in quality ($p < .001$) than those from GoldStar (mean = 2.73); components of sound systems from Japan (mean = 3.99) to be manufactured significantly better ($p < .001$) than those from South Korea (mean = 3.05); and products to be assembled significantly better ($p < .001$) in Japan (mean = 4.14) than those in South Korea (mean = 3.09). The reliability of the composite scales is reasonably high with Cronbach alphas ranging from .77 to .95. Hence each type of scale was summed in subsequent analysis, while the "purchase value" and "appealingness of color" scales were analyzed individually.

Dependent Measures	Main Effects			Interactions			
	Brand (B)	Component Origin(C)	Assembly Origin(A)	BxC	BxA	CxA	BxCxA
Performance Attributes	73.04**	5.28*	1.49	7.43**	.25	4.70*	2.68
Long-Term Attributes	36.50**	.36	.10	8.83**	.01	3.77*	.83
Social Attributes	36.35**	.01	.93	.30	.17	.78	2.09
Purchase Value	23.22**	.07	1.22	1.51	.50	2.76	1.94
Overall Evaluations	55.43**	4.65*	.01	2.45	.52	.43	2.13
Observable Attribute[1]	3.25	.05	.30	.41	.04	3.14	.02

Table 2. Results of ANOVAs (F values) on Different Dependent Measures Before Product Experience

[1] This dependent measure is designed to assess the magnitude of possible demand bias.
** – significant at .01; * – significant at .05

Demand Bias

As mentioned, subjects' responses to the observable attribute: "appealingness of color," was used as an assessment of demand bias. As shown in Table 2 (last row) there were no main effects or interactions for this measure. This provides strong support for the validity of the treatment effects rather than for an explanation based on demand.

The different types of scales were analyzed using MANOVA in which component origin, assembly origin, brand name, and product experience (within subject) acted as independent variables. In all scales (except the "observable attribute" as discussed), product experience interacts with other independent variables. Therefore, the data was analyzed before and after experience separately.

Before Product Experience

Table 2 reports the effects of the independent variables before subjects experienced the product. As hypothesized in H3, the effect of brand is significant (column 1) across all dependent measures. Component origin (column 2) exerts significant main effects on the "performance attributes" (row 1) and "overall evaluations" (row 5), and it interacts with brand on the "performance" and "long-term attributes" (rows 1 and 2). A closer examination of the interaction effect (see Figures 1 and 2) revealed that Sony with components from Korea was rated as favorably as Sony with components from Japan. This finding implies that a good brand name does erode negative component origin effects in the "performance" and "long-term attributes," and therefore supports H4. But such effects were not strong enough to affect the "overall evaluation" (row 5).[4]

The effect of brand name on assembly origin is more observable. When brand name is present, assembly origin does not exert a significant main effect across all measures (column 3)

but it does interact with component origin in the "performance attributes" and "long-term attributes" (column 6, rows 1 and 2). A closer examination of the pattern of interaction (see Figures 3 and 4) reveals that the interaction is not caused by significant differences among the cells, but by the changing form of the relations. Thus, while assembly origin exerts some main effects in Study 1 (when paired with component origin only), its effect was substantially reduced in Study 2 when brand name was introduced, thus confirming H5.

Figure 1. Significant B X C Interaction (Before Product Experience)

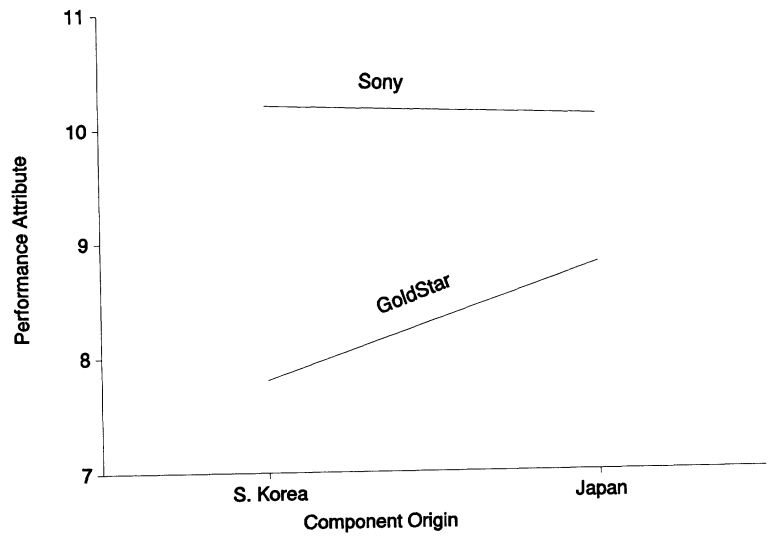


Figure 2. Significant B X C Interaction (Before Product Experience)

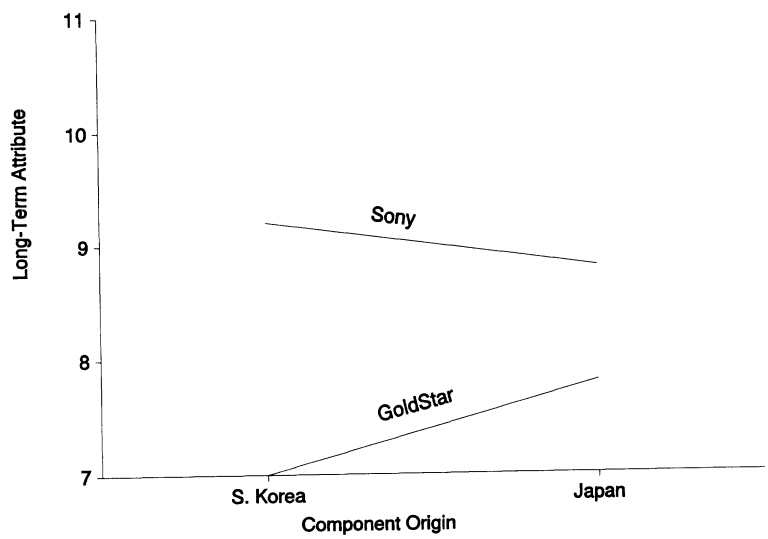


Figure 3. Significant C X A Interation (Before Product Experience)

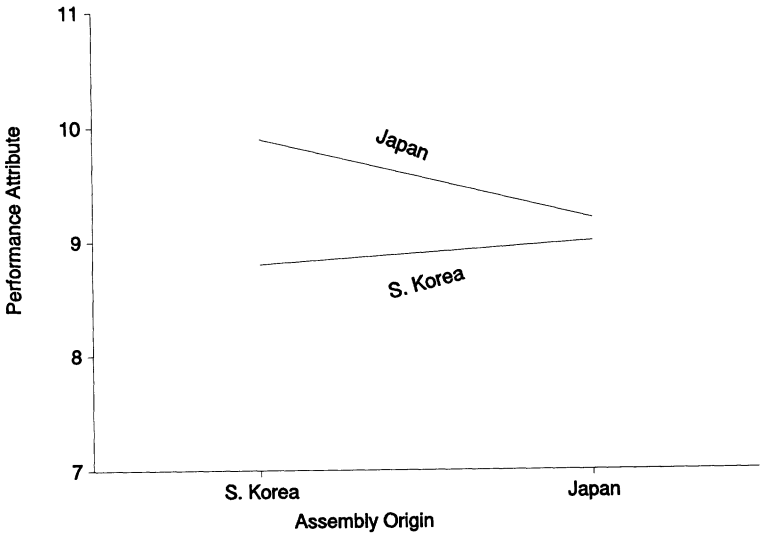
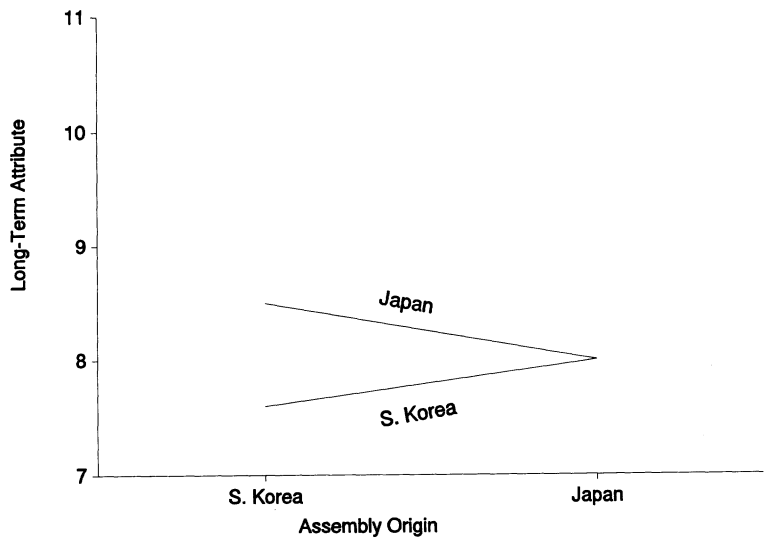


Figure 4. Significant C X A Interaction (Before Product Experience)



The above findings support the proposition that brand name does reduce origin effects. While there were some indications that a positive brand name does reduce the component origin effects, brand name's effect on assembly origin is much stronger and more obvious. This seems to suggest that decomposition of the country image *and* strong brand name may be one way to reduce negative country images.

After Product Experience

Table 3 reports the ANOVA results after the product experience. While brand name continues to exert significant main effects across all measures (column 1, confirming H3), the effects of component origin and assembly origin are of greater interest.

Table 3. Results of ANOVAs (F values) on Different Dependent Measures After Product Experience

Dependent Measures	Main Effects			Interactions			
	Brand (B)	Component Origin(C)	Assembly Origin(A)	BxC	BxA	CxA	BxCxA
Performance Attributes	13.76**	.27	5.46*	.01	1.40	.07	.09
Long-Term Attributes	22.84**	.12	.30	.50	.00	.01	.18
Social Attributes	22.47**	.07	8.27**	.00	1.08	.06	.02
Purchase Value	18.44**	.02	6.52**	.04	.35	.18	.62
Post-Experience Evaluations	8.21**	.71	2.98	.08	3.77*	.14	.05
Overall Evaluations	23.15**	.01	1.99	.31	1.18	.04	.11
Observable Attribute[1]	.06	1.58	.07	.03	.06	1.11	.01

[1] This dependent measure is designed to assess the magnitude of possible demand bias.
** – significant at .01; * – significant at .05

Compared with previous results, the effects of component origin on all measures after product experience are insignificant both in the main effects (column 2) and in interactions (columns 4, 6, and 7). This finding supports the idea that negative component origin can be removed. Effects from brand name and product experience seemed to be able to override any effects due to component origin. The results thus support H6.

Interestingly, the effects of assembly origin seem to be *magnified* by the product experience. It registers significant main effects in "performance attributes," "social attributes," and "purchase value" (column 3), and also interacts with brand in the "post-experience evaluations." While the findings may seem contradictory to H7 (that product experience further erodes assembly origin effects), a closer examination reveals some interesting observations. Table 4 reports the group mean scores in the eight treatment cells. Comparing the mean scores on the "performance attributes" (row 6), the "social attributes" (row 8) and the "purchase value" (row 9) along the treatment cells for those who were told that the system is assembled in South Korea (columns 2, 4, 6, and 8), with those who were told that the system was assembled in Japan (columns 1, 3, 5, and 7), suggests the order of the mean scores were in fact *reversed*. That is, subjects who were told

that the stereo system was assembled in South Korea rated the system significantly (.05) *higher* than those who were told that the stereo system was assembled in Japan. The finding seems to suggest that after the product experience, subjects changed their evaluation in such a way that the Korean-assembled products were rated higher.

Such a change may be explained by what happened during the product experience—that is, how the subjects rated the product experience. The pattern of results in Table 4 provides some clues. While all the mean scores were lowered after the product experience, the post-experience measures (composite of two scales: satisfaction and subjective disconfirmation, see Tse and Wilton 1988) suggested that most of the subjects were satisfied with the experience (i.e., with score higher than 7, sum of two 7-point scales), except for two cells (row 11, columns 5 and 7). But these cell means (6.46 and 6.76) did not significantly differ from 7.00. Thus it is reasonable to conclude that the subjects rated the product experience reasonably satisfactory. The drop in the means after the product experience may reflect the adjustment of expectations after the product experience.

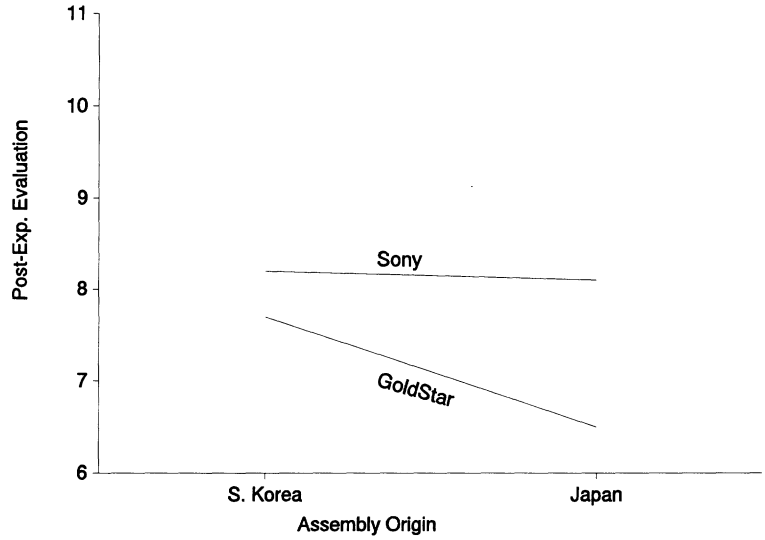
Table 4. Mean Scores (Standard Deviations) of Dependent Variables in Treatment Groups

	Sony				GoldStar			
Dependent	JPN Component		SK Component		JPN Component		SK Component	
Variables	JPN AO	SK AO	JPN AO	SK AO	JPN AO	SK AO	JPN AO	SK AO
A) Before Product Experience								
Performance Attributes[1]	10.09 (1.28)	10.32 (1.15)	10.29 (1.20)	10.33 (1.28)	8.29 (1.52)	9.39 (1.62)	8.04 (1.54)	7.55 (1.68)
Long-Term Attributes[1]	8.35 (1.87)	8.64 (1.98)	9.36 (1.78)	9.00 (1.55)	7.08 (1.89)	8.00 (2.23)	6.92 (1.82)	6.32 (1.99)
Social Attributes[1]	10.17 (2.02)	10.44 (1.26)	10.07 (2.02)	10.75 (1.59)	8.25 (2.42)	9.04 (1.68)	8.72 (2.37)	8.27 (1.93)
Purchase Value[2]	4.57 (.84)	4.64 (.81)	4.71 (.83)	4.76 (.89)	3.79 (1.02)	4.29 (.91)	4.00 (.82)	3.82 (.96)
Overall Evaluations[3]	14.70 (1.69)	14.72 (1.67)	14.21 (2.33)	14.71 (1.93)	12.71 (2.24)	12.83 (2.51)	12.20 (1.68)	11.38 (1.99)
B) After Product Experience								
Performance Attributes[1]	8.35 (2.23)	8.72 (2.03)	8.57 (1.65)	8.91 (2.66)	6.83 (2.26)	7.79 (2.25)	6.76 (2.60)	8.14 (2.00)
Long-Term Attributes[1]	8.00 (2.17)	8.32 (2.12)	8.36 (2.21)	8.29 (2.15)	6.70 (2.05)	6.92 (2.60)	6.32 (2.17)	6.59 (1.97)
Social Attributes[1]	9.35 (2.57)	10.12 (2.11)	9.43 (2.74)	9.91 (2.66)	7.33 (2.87)	8.63 (2.02)	7.24 (2.37)	8.59 (1.76)
Purchase Value[2]	4.13 (1.25)	4.52 (1.09)	4.14 (1.35)	4.48 (1.33)	3.17 (1.37)	3.83 (1.19)	3.32 (1.11)	3.77 (1.15)
Overall Evaluations[3]	13.00 (2.85)	13.32 (2.59)	13.54 (2.99)	13.33 (3.60)	10.71 (3.01)	11.71 (2.93)	10.44 (2.80)	11.59 (2.24)
Post Experience Evaluation[1]	7.78 (2.32)	8.08 (1.98)	8.36 (1.87)	8.24 (2.66)	6.46 (2.19)	7.67 (2.35)	6.76 (2.13)	7.86 (2.03)

JPN denotes Japanese; SK denotes South Korean; AO denotes Assembly Origin
[1] sum of two 6-point scales
[2] represents one 6-point scale
[3] sum of three 6-point scales

Figure 5 displays the significant brand by assembly origin interaction on the "post-experience evaluations." The result suggests that the subjects rated the product experience by Sony (assembled in Japan), Sony (assembled in South Korea)

Figure 5. Significant B X A Interaction (After Product Experience



and GoldStar (assembled in South Korea) the same, and all three significantly better than GoldStar (assembled in Japan). Thus the product experience seemed to help close the gap between GoldStar assembled in South Korea, Sony assembled in South Korea, and Sony assembled in Japan, while GoldStar assembled in Japan remains different from the other three. In other words, well-known global brands may not be affected by changing assembly origins, while less-known brands may be affected if subjects are given the chance to try the product. This is in contrast to findings before the product experience in which B x A were insignificant in all measures (Table 2).

The data seem to suggest that the product experience provides comparatively stronger support for subjects in the Korean assembly cells than those in the Japanese assembly cells. This may have caused the subjects in the Korean assembly treatment cells to rate the stereo system better than their counterparts in terms of "performance attributes," "social attributes," and "purchase value." These findings are not totally unexpected. On the contrary, they may provide some clues to the underlying reason why products from negative country images were welcome in the marketplace. When a product's negative country image is decomposed, branded with a strong global name, and shown to provide reasonable performance, the consumers may perceive the product as performing well and having good purchase value. Subsequently, they would be proud to own it. It is necessary to point out that this is a tentative proposition to be confirmed by subsequent studies, but this idea may warrant future effort. While H7 is not confirmed, the finding seems to provide an intriguing question to be answered.

SUMMARY AND DISCUSSION

Manufacturing products in countries with lower production costs is not a new phenomenon. Recent developments, including expansion of global markets (Levitt 1983), changing world order (modernization in many socialist countries), increasing technological transfers across countries, and growing recognition of cost advantage as a competitive global strategy (Porter 1980), seem to drive more and more firms to reexamine this strategic option. Many firms further extend this idea to partitioning their production process into different countries (Kogut 1985a; 1985b).

The two studies in this article are among the first to demonstrate how consumers evaluate a product if its original "made in" concept is decomposed. There are four major findings. First, when decomposed, the effects due to component and assembly origins were less than those found in earlier country-of-origin studies. Second, the influence of component origin and assembly origin seemed to be attribute-specific. Third, a strong positive brand (Sony) was found to override a negative component origin effect. Finally, after the product experience, a sound system assembled in South Korea was found to command a higher perceived purchase value than the one assembled in Japan. These findings support the impression formation explanation adopted in the study.

This current study chose brand name, along with component and assembly origins as extrinsic cues in affecting respondents' product evaluation. Previous studies (e.g., Johansson, Douglas, Nonaka 1985; Liefeld 1993; Liefeld and Wall 1993; Tse and Gorn 1993) suggested that there were other extrinsic cues that may affect product evaluations. The findings in this study are quite unique in that it is the first study that reports how negative country images could be totally *removed*.

These findings lead to some future research opportunities. There is a growing number of products with multiple countries-of-origin. Some of today's automobiles are designed in Italy, engineered in West Germany, have parts from Japan, and are assembled in South Korea (see Mitchell 1988; Nussbaun et. al. 1988). There are also products with different components from different countries. For example, an IBM PC may have a monitor from South Korea, memory and CPU chips from Japan, casting from Singapore, etc. These types of products may become more common as more manufacturers consider global production sharing to reduce their production costs. At the same time, these different forms of multiple countries-of-origin offer challenges in the continuous effort to understand how consumers evaluate these products. The decomposition phenomenon offers an opportunity to understand an interesting behavioral process, the psychological mechanism of information disintegration, and the reversal of the conventional information integration paradigm.

Psychologically, what does decomposing mean? Does it imply that when a negative image is decomposed, its negativity is

shared, allowing other information cues (e.g., brand name) to be more dominating? The findings in this study suggest that subjects may have weaker concepts relating to the component and/or assembly origins and, in turn, these concepts exert less impact on consumer product evaluation. Additional effort is needed to verify and/or extend this proposition. But if it is true, how would consumers evaluate products whose production line stretched across, say, four or five countries? When this happens, how should the impression formation explanation be modified in this context?

Some managerial implications follow from the findings in this paper. In contrast to previous studies, the findings suggest that negative country images can totally be removed. Consumers may hold weaker, and/or less distinct concepts on component and/or assembly origins when the "made in" concept is decomposed. The decomposition, together with a strong global brand and product experience, were shown to remove negative "made-in" images. It is likely that other product information cues such as pricing may also reduce negative country image effects (e.g., Liefeld and Wall 1993), but decomposition seemed to (a) cost less to the marketer, and (b) avoid other unwanted effects (such as lowering the price may lower the quality perception). This suggests that a hurdle in marketing products from countries of less favorable images could be overcome cost effectively by decomposing the "made-in" concept. It implies that when manufacturers lower their production costs by globalizing their production lines they may simultaneously benefit from having a positive product image.

As more and more firms engage in decomposing their production line, it is likely that component and assembly origin may become a proxy for product quality, and begin to exert negative influences. Whether companies can continue to remove such negative influences by further decomposing the component and assembly origins is an intriguing idea. Further research into the exact psychological process in decomposition may offer the needed insights.

For countries with less favorable images, the findings provide some hope. In contrast to previous studies that negative country images cannot be totally removed, decomposition suggests that a country can compete by specializing in, say, assembling the products. The findings from this paper may provide them with stronger confidence in attracting manufacturers of global brands.

In addition, the finding that products assembled in countries with less favorable images may command higher perceived purchase value suggests that their products may have a niche in the market. Rather than competing on price alone, their products can be positioned as having higher purchase value (while certainly not positioned as having the best quality),

ACKNOWLEDGMENTS

This study is jointly supported by grants from the Centre for International Business Studies at the University of British Columbia and the College of Communication, University of Texas, Austin.

The authors would like to thank Miss Anne Lavack for her helpful comments on the earlier draft of the paper.

especially if consumers are given opportunities to try the product. One needs to keep in mind the length of time it took North American consumers to be convinced of the quality of Japanese products.

A number of limitations were noted. First, other forms of decomposition to reflect the current "global sharing" practices need to be studied. Second, the results of the two studies may depend on the countries chosen. If other countries were chosen, the effects of decomposition, brand name and/or experience may be different. Finally, Study 2 adopts a marginally positive product experience. If the product experience was negative, attribution of performance failure might elevate the effects of country image as suggested by some (e.g., Johansson 1989) in the literature.

THE AUTHORS

David K. Tse *is associate professor of marketing at the Faculty of Commerce, University of British Columbia, Vancouver, British Columbia, Canada.*

Wei-na Lee *is assistant professor in the Department of Advertising, University of Texas at Austin.*

NOTES

1. An anonymous reviewer kindly calls for some discussion in the external validity of the component and assembly origins treatments of the study. There are two relevant external validity issues: 1) whether respondents find the treatments doubtful, and 2) whether firms are promoting component and assembly origin information. In this study, we conducted two pretests and two experiments. No respondents raised the validity question during the pretests and experiments, or in debriefing sessions. It may relate to the fact that such firm behaviors have been reported in popular magazines (e.g., *Business Week*). Thus we may conclude that subjects did not have trouble in reacting to the treatments administered. It is true that firms do not promote component and assembly origins—at least not now. The point is: why? It is likely that firms do not understand how such information may affect their sales or market shares. Thus we felt if we took a more proactive approach in our research to find out how consumers may react to the component and assembly origin information, there would be useful implications for managers. While the component and assembly origins may not be used by firms yet, we feel such a proactive approach is appropriate.

2. The scales used in this experiment were similar to the ones in Tse and Gorn (1993) with some modifications. Since a major objective of the current paper is to investigate whether component and assembly origins exert influence on different attributes, we did not collapse the scales by using factor analysis but by examining the different types of the scales. In experiments with product experiences—e.g., in satisfaction studies by Surprenant and Churchill (JMR 1979), and Tse and Wilton (JMR 1989)—product attributes tend to cluster together; this is also confirmed in Tse and Gorn (1993). To investigate whether component and assembly origin exert attribute-specific influences, the work reported treatment effects along different types of attributes.

3. The current study follows similar procedure as in Tse and Gorn (1993). Conceptually the two experiments reported in the article extend from the work of Tse and Gorn (1993), but they differ from the Tse and Gorn (1993) study significantly. As one may see, the objectives of the two were totally distinct; so were the results.

4. While one may argue that the effect of component origin is reduced because, compared to Table 1, component origin registered main effect significant at .01 (row 5) on "overall evaluation" and in Table 2, only 0.05 (row 5), this is not convincing evidence.

References

Bargh, John A. "Automatic and Conscious Processing of Social Information." In *Handbook of Social Cognition* 3, eds. Robert S. Wyer and Thomas K. Srull, 1–43. Hillsdale, NJ: Lawrence Erlbaum Associates, 1984.

Biehal, Gabriel, and Dipankar Chakravarti. "Information Presentation Format and Task Goals as Determinants of Consumers' Memory-Retrieval and Choice Processes." *Journal of Consumer Research* 8 (March 1982): 431–44.

Bilkey, Warren J., and Erik Nes. "Country-of-Origin Effects on Product Evaluations." *Journal of International Business Studies* 13 (Spring/Summer 1982): 89–99.

Cattin, Philippe, Alain Jolibert, and Colleen Lohnes. "A Cross-Cultural Study of `Made In' Concepts." *Journal of International Business Studies* 13 (Winter 1982): 131–141.

Chao, Paul. "The Impact of Country Affiliation on the Credibility of Product Attribute Claims." *Journal of Advertising Research* 29 (April/May 1989): 35–41.

Churchill, Gilbert A., Jr., and Carol Surprenant. "An Investigation into the Determinants of Consumer Satisfaction." *Journal of Marketing Research* 19 (November 1982): 491–504.

Dreben, Elizabeth K., Susan T. Fiske, and Reid Hastie. "The Independence of Item and Evaluation Information: Impression and Recall Order Effects in Behavior-Based Impression Formation." *journal of Personality and Social Psychology* 37 (October 1979): 1758–68.

Erickson, Gary M., Johnny K. Johansson, and Paul Chao. "Image Variables in Multi-Attribute Product Evaluations: Country-of-Origin Effects." *Journal of Consumer Research* 11 (September 1984): 694–699.

Ghoshal, S. "Global Strategy: an Organizing Framework." *Strategic Management Journal* 8, no. 5 (1987): 425–40.

Hamilton, David L., Lawrence B. Katz, and Von O. Leirer. "Organizational Processes in Impression Formation." In *Person Memory: The Cognitive Basis of Social Perception*, eds. Reid Hastie, et al., 121–54. Hillsdale, NJ: Lawrence Erlbaum Associates, 1980.

Hamel, G., and C.K. Prahalad. "Do You Really Have a Global Strategy?" *Harvard Business Review* (July-August 1985): 139–48.

Han, C. Min, and Vern Terpstra. "Country-of-Origin Effects for Uni-National and Bi-National Products." *Journal of International Business Studies* 19 (Summer 1988): 235–56.

_____. "Country Images: Halo or Summary Construct?" *Journal of Marketing Research* 26, no. 2 (May 1989): 222–9.

Hock, Stephen J., and Young-Won Ha. "Consumer Learning: Advertising and the Ambiguity of Product Experience." *Journal of Consumer Research* 13 (September 1986): 221–33.

Hock, Stephen J., and John Deighton. "Managing What Consumers Learn from Experience." *Journal of Marketing* 53 (April 1989): 1–20.

Hong, Sung-Tai, and Robert S. Wyer, Jr. "Effects of Country-of-Origin and Product-Attribute Information on Product Evaluation: An Information Processing Perspective." *Journal of Consumer Research* 16 (September 1989): 175–87.

_____. "Determinants of Product Evaluation: Effects of the Time Interval Between Knowledge of a Product's Country-of-Origin and Information about Its Specific Attributes." *Journal of Consumer Research* 17 (December 1990): 277–89.

Hong, Sung-Tai, and Julie F. Toner. "Are There Gender Differences in the Use of Country-of-Origin Information in the Evaluation of Products?" Thomas Scrull, ed. *Advances in Consumer Research* 16 (1989): 468–72.

Huber, Joel, and John McCann. "The Impact of Inferential Beliefs on Product Evaluation." *Journal of Marketing Research* 19 (August 1982): 324–33.

Jacoby, Jacob, Jerry C. Olson, and R. A. Haddock. "Price, Brand Name and Product Composition Characteristics as Determinants of Perceived Quality." *Journal of Applied Psychology* 55 (1971): 570–9.

Johansson, Johnny K., Susan P. Douglas, and Ikujiro Nonaka. "Assessing the Impact of Country-of-Origin on Product Evaluations: A New Methodological Perspective." *Journal of Marketing Research* 22 (November 1985): 388–396.

Johansson, Johnny K., and Israel D. Nebenzahl. "Multinational Production: Effect on Brand Value." *Journal of International Business Studies* 17 (Fall 1986): 101–26.

Johansson, Johnny K. "Determinants and Effects of the Use of 'Made in' Labels." *International Marketing Review* 6, no. 1 (1989): 47–58.

Kardes, Frank R. "Effects of Initial Product Judgments on Subsequent Memory-Based Judgments." *Journal of Consumer Research* 13 (June 1986): 1–11.

Kim, Ken I., and Kyoo H. Kim. "Strategic Implications of Transnational Production Sharing." *Pacific Basin Quarterly* 11 (Winter/Spring 1984): 1–13.

Kim, Ken I., Kyoo H. Kim, and James P. LeSage. "An Empirical Study of The Transnational Production Sharing of the Asian NICS with Japan." *Journal of International Business Studies* 17 (Summer 1986): 117–129.

Kogut, Bruce. "Designing Global Strategies: Comparative and Competitive Value Added Chains." *Strategic Management Journal* 6, no. 4 (1985a): 15–28.

_____. "Designing Global Strategies: Profiting from Operational Flexibility." *Sloan Management Review* 27, no.1 (1985b): 27–38.

Levitt, Theodore. "The Globalization of Markets." *Harvard Business Review* 62 (May/June 1983): 92–102.

Liefeld, John. "Consumer Use of Country-of-Origin Information in Product Evaluations: Evidence 3 from Experiments." In *Product and Country Images: Impact and Role in International Marketing*, eds. N. Papadoppolous and L. Heslop. Binghamton, NY: Haworth Press, Forthcoming 1993.

Liefeld, John, and Marjorie Wall. "The Effects of Intrinsic, Country-of-Origin and Price Cues on Product Evaluation and Choice." In *Proceedings of the Summer ACR-Amsterdam*, eds. Fred Van Raij and Gary J. Bamossy. Forthcoming, 1993.

Lillis, Charles M., and Chem L. Narayana. "Analysis of 'Made In' Product Images—An Exploratory Study." *Journal of International Business Studies* 5, no. 1 (1974): 119–127.

Mascarenhas, J. "Coordination of Manufacturing Interdependence in MNCs." *Journal of International Business Studies* (Winter 1984): 91–106.

Mitchell, George. "Made in the U.S.A." *Business Week*, 29 February 1988: 68–72.

Nussbaun, Bruce, Dori Jones Yang, Gregory L. Miles, Russell Mitchell and Lois Therrien. "Made in U.S.A.: Help Wanted from the Multinationals." *Business Week* (February 29 1988): 66–70.

Oliver, Richard L. "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions." *Journal of Marketing Research* 17 (November 1980): 460–9.

Olsen, Jerry C. "Price as an Information Cue: Effects on Product Evaluations." In *Consumer and Industrial Buying Behavior*, eds. Arch G. Woodside, Jagdish J. Sheth, and Peter Bennett. New York: North-Holland, 1977.

Porter, Michael. *Competitive Strategy*. New York, NY: The Free Press, 1980.

Robertson, K. R. "Recall and Recognition Effects of Brand Name Imagery." *Psychology and Marketing* 4 (Spring 1987): 3–15.

Srull, Thomas K. "Person Memory: Some Tests of Associative Storage and Retrieval Models." *Journal of Experimental Psychology: Human Learning and Memory* 7 (September 1981): 941–50.

Sujan, Mita. "Consumer Knowledge: Effects on Evaluation Strategies Mediating Consumer Judgments." *Journal of Consumer Research* 12 (June 1985): 31–46.

Tse, David K., and Peter C. Wilton. "Models of Consumer Satisfaction Formation: An Extension." *Journal of Marketing Research* 25 (May 1988): 204–212.

Tse, David K., and Gerald J. Gorn. "An Experiment on Country-of-Origin Effects in the Era of Global Brands." *Journal of International Marketing* 1, no. 1 (1993): 57–77.