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## **Product Ethnicity: Assessing Cognitive Associations Between Products and Countries**

**WORKING PAPER 0712**

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March 2007-03-28

The authors thank the Editor and three anonymous reviewers for their insightful comments on earlier versions of the paper. We also thank Robert Andrews, Min-Yue Dong, Björn Ivens, Bruno Kocher, Marco Lalos, Yh-Teen Lee, Brigitte Müller, and Patricia Ochoa for assistance in instrument translation and data collection, and Sébastien Mena, Amandine Perrinjaquet, and Gilles Verdon for their assistance in data analysis.

# Product Ethnicity: Assessing Cognitive Associations Between Products and Countries

**Abstract.** Consumers make stereotypic associations between products and countries based on their perception of a country's know-how and reputation relative to design, manufacturing, or branding of particular generic goods. Such associations when shared globally reflect product ethnicity, a concept which is empirically explored in this paper. Operationalization of product ethnicity is based on country-product associations made by consumers with either product or country as initial stimulus, resulting in a combined two-way measurement. Product ethnicity is first investigated at an exploratory level across five survey countries for a large set of products and countries (Study 1). Context-centered association tendencies (CCATs) are identified as respondents tend to associate goods more closely with their own country. Product ethnicity and CCATs are further conceptually related to the COO literature and research hypotheses are tested with a new set of countries (Study 2), two collectivist cultures (China and Mexico) and two individualist cultures (Germany and the United States). Finally we show in Study 3 that consumers are more willing to buy product offerings which are congruent rather than non-congruent with product ethnicity.

# Product Ethnicity: Assessing Cognitive Associations Between Products and Countries

## **Introduction**

This research investigates the association made by consumers between countries and generic products. Some products are typically associated with a particular country-of-origin (e.g. vodka with Russia), others are associated with several countries (e.g. cars with Germany, Japan, USA), while most products are not associated with specific countries. Products may be linked to a country because of its location, climate or natural resources, or because of traditional manufacturing know-how. Countries also become associated to products because they are known as the place of invention or development (e.g. the scooter invented in the U.S. was later developed in Italy and Japan), place of transformation and use (e.g. tea for England), or home to a brand associated to this country through its language (Leclerc et al., 1994).

These associations, dubbed by Roth and Romeo (1992) as ‘product-country matches’, later referred to as ‘product ethnicity’, may change consumer perception. For instance, a country considered as a poor origin, in general, may be viewed much more positively when the particular product is associated with this country. Product ethnicity, which reflects a strong association between a product and a country, is a form of typicality (Rosch and Mervis, 1975). Global product ethnicity reflects the extent to which a product-country association is: 1. strong (i.e. most consumers associate a product to a country-of-origin), 2. quasi-exclusive (i.e. the product is significantly associated with a single or very few countries-of-origin), and 3. cross-national or global (i.e. there is a high degree of similarity for a particular country-product association across survey countries).

A large body of research has developed over the past 40 years in an attempt to link COO, in particular “country image”, with product evaluation and intention to purchase. Although research results are mitigated, many authors have convincingly demonstrated the existence of a relationship (for reviews, see Özsomer and Cavusgil 1991, Jaffé and Nebenzahl 2001), even in the case of low-involvement goods (Ahmed et al. 2004), lending support to the idea that further investigation into the particular associations consumers establish between a product and a (or several) countries, is necessary. In the global environment where consumers can freely choose between products of different origins, it is relevant to assess product ethnicity, that is the degree of product-country match. The purpose of this research is, therefore, to

assess country-product associations made by consumers in different countries, by focusing on categorization outcomes rather than processes.

The paper proceeds as follows. Section I describes categorization processes and shows how they apply to product-categorization of countries and to country-categorization of products. Different dimensions of product ethnicity are defined in section II, partly based on country-of-origin (COO) studies which focus on stereotype-based product-country associations. Research hypotheses relate product ethnicity to key variables that have been shown to influence the use of COO cues such as product familiarity (Johansson et al., 1985), product involvement (Ahmed et al. 2004), consumer ethnocentrism (Shimp and Sharma, 1987), and cultural differences such as individualism and collectivism (Gürhan-Canli and Maheswaran 2000). In section III, an exploratory study of product ethnicity is presented. Study 1 is based on data collected from surveys conducted in 5 countries: Canada, France, Germany, Great Britain, and Tunisia. It investigates product associations with 18 countries of origin and country associations with 20 products. Data analysis is first based on the use of standard dispersion indices for measuring product ethnicity, revealing the limitations of such indices for capturing product ethnicity. Specific formulas are proposed for appropriate measurements of simple product-country (PC) and country-product (CP) associations, product ethnicity, and global product ethnicity. Section III also presents preliminary evidence of context-centered association tendencies on associations between products and countries based on data from Study I. Section IV presents the empirical setting and Section V the data analysis and findings of Study 2. This study is designed to confirm the exploratory findings in Study 1 by collecting data in 4 major countries (China, Germany, Mexico, and the United States) and testing the research hypotheses proposed in Section II. Section VI presents Study 3 which is intended to assess the predictive validity of the product ethnicity construct by testing the extent to which congruence between product ethnicity and country-of-origin influences consumer willingness to buy. Section VII discusses the findings as well as the theoretical and managerial implications, and shows the limitations of this research.

## **I - Use of the “product ethnicity” category in consumer evaluation process**

### ***Underlying processes in consumer use of cognitive categories***

In the classic multi-attribute model (Fishbein, 1963), and in multivariate compensatory or non-compensatory first-choice decision processes (Bettman, 1979), consumers are assumed to act in a linear and organized manner, systematically processing information about the product

and making rational choices. Actual decision making processes may not match such a rational approach, in particular because of lack of time in gathering relevant information, uncertainties related to information quality, data availability, and the reliability of information processing. In response to such limitations, categorical models of information processing have been developed and considered over the past 20 years as realistic alternatives for the organization of consumer knowledge. Decision makers revert to a memorized simplifying cognitive model, which can be applied to many different situations and objects (Mervis and Rosch, 1981). Many authors have highlighted the role of categorization in reducing complexity and structuring information processing (Sujan, 1985; Cohen and Basu, 1987; Alba and Hutchinson, 1987). However, they have differing views of category representation (Cohen and Basu, 1987). Under the *classical approach*, an object – or instance – is seen as belonging to a category if it has all attributes deemed necessary. This view is related to the hierarchical approach to knowledge categorization (Collins and Quillian, 1969). At each level of a hierarchy of categories, there are substitution groups to choose from. However, this approach lacks flexibility in that an instance exclusively belongs to a given category (Komatsu, 1992). Reed (1972) and Rosch (1973) further investigated the status of category instances and introduced the concept of prototype: multiple experiences (familiarity) with a category enables consumers to develop prototypes which can be used to facilitate the classification of objects. Under the *prototypical approach*, an object is understood either in a holistic manner, along a global representation, or along some attribute configuration. Finally, the *categorical approach* relies on memorized examples which serve as a basis for comparison (Rosch and Mervis, 1975). The degree of typicality may vary and may be uncertain, depending on the object under consideration. This approach is related to the network model of knowledge organization, which considers categories and instances to be connected to each other (McClelland and Rumelhart, 1986), allowing for instances to represent several categories. The degree to which an instance is representative or typical of a category will depend on characteristics of both category and instance. Typicality is further seen as judgmental, with typical instances serving as categorization exemplars for new objects with similar features (Tversky and Kahneman, 1974). Authors have identified several determinants of typicality, for example, the number of attributes shared by different products (Mervis and Rosch, 1981), product familiarity, frequency of appearance within a category, number of salient attributes (Loken and Ward, 1990), congruence with respect to a category's pursued objectives, or desired benefit (Barsalou, 1985), and degree of fit between an instance

and the category (Dawar and Anderson, 1994), based on Murphy and Medin's (1985) research on conceptual coherence.

The categorical approach is used in this research for capturing strong matches between products and countries. Consumers organize their knowledge about country $\leftrightarrow$ product matches along two complementary forms of categorization: products seen as typical of a particular country (e.g. the category of Japanese products) and countries seen as typical origins for particular products (e.g. the category of countries-of-origin for luxury products). Strong product $\leftrightarrow$ country matches are the outcome of categorization processes occurring both ways, resulting in non-void intersections of the two sets. Studying categorization in both directions and making sense of the degree of overlap between them are therefore central tenets of this research

## **II – Product ethnicity as strong product-country matches: A theoretical framework**

### *Country image and country-of-origin image*

As emphasized by Martin and Eroglu (1993, p. 192) ‘... from a conceptual perspective, most of the scales used do not clearly distinguish between the image objects; that is, whether it is country image or product image that is being measured.’<sup>1</sup> Country image is defined by Martin and Eroglu (1993, p. 193) as ‘the total of all descriptive, inferential and informational beliefs one has about a particular country.’ Martin and Eroglu developed a **pure construct** of country image, showing that it can be divided into three subdimensions: (1) political; (2) economic; and (3) technological. Country image may become partly divorced from product image. For instance, Chinese animosity against Japan's misconduct during WWII might lead Chinese consumers not to buy Japanese goods in spite of their high quality image (Klein, Ettenson, and Morris, 1998), though animosity does not necessarily translate into consumer avoidance behavior as is the case for mainland Chinese consumers vis-à-vis products “made in Taiwan” (Amine, Chao, and Arnold 2005) . Similarly, Afghanistan may be considered a Third World underdeveloped country, but Afghan rugs are highly viewed as quality products (Phau and Suntornnond 2006). Stereotypes play a key role in country image (Reiersen 1966). For example, Japanese consumers associate Germany and France with long history and tradition,

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<sup>1</sup> One can also ‘personify’ COOs since the image can also be related to the individual consumer who ‘buys products made in country X’ (Nebenzahl et al., 2003). The image object is then the individual in relation to products and countries.

Switzerland and Australia with rich nature, California and Brazil with plentiful agricultural products, and the United States and Germany with advanced industrial technology (Nishina, 1990). However, pure country stereotypes, fully divorced from products, technology, and manufacturing are hard to isolate. Therefore, most constructs related to country-of-origin are not pure country images. COO studies take into account the product dimension by dealing with Country Image Effects (implicitly, ‘... on product evaluation’). All COO scales use items that feature country image in relation to the design, manufacture, assembly and branding of products (see Papadopoulos and Heslop, 1993, Agrawal and Kamakura 1999, and Jaffe and Nebenzahl 2001 for reviews). The literature suggests there are distinctive COO cognitive sub-categories related to country-of-manufacture, country-of-brand and country-of-design, along which consumers organize information related to product categories in relation with a country (Samiee 1994; Nebenzahl et al. 1997; Srinivasan et al 2004). Even, the concept of 'country equity' (Shimp et al. 1993) is derived by asking respondents to freely express thoughts about countries **and** products for 11 possible COOs. The two dimensions of 'country equity' that account for almost three-quarters of the variance, price and quality, are directly product-related.

As a consequence, many authors in country-of-origin research argue that country image is product specific (Jaffe and Nebenzahl 2001). As emphasized by Eroglu and Machleit (1989, p. 38): ‘There is clearly a product category factor which, along with non-cue factors, determines the value of the country of origin as a quality cue.’ Country-product stereotyping is evidenced by most COO studies with a limited number of consistent stereotypes such as the robustness and reliability of German products or the association between France and luxury goods which can be found across a large number of studies (Bilkey and Nes 1982; Samiee 1994; Nebenzahl et al. 1997; Nebenzahl et al. 2003). When cultural, political, or language idiosyncrasies lead to country image differentiation, COO studies suggest that typical product-country associations exist (Yaprak 1978; Yavas and Alpay 1986). Some products are considered more “ethnic” than others, more typical of certain countries (Papadopoulos and Heslop 1993; Jaffé and Nebenzahl 2001). Beyond their general image of a particular country, consumers also make stereotypical associations between particular products and countries-of-origin which are at the heart of the product ethnicity construct.

### ***Product ethnicity: definitions***

Product ethnicity refers to the stereotypic association of a generic product with a particular country-of-origin by consumers of a particular country-of-purchase. Indeed, consumers from

different countries may not make the same product-country or country-product associations. Thus, one may refer to the French product ethnicity of wine for German consumers, or to the Australian product ethnicity of wine for British consumers. The 'ethnicity' part of 'product ethnicity' is related to a country (or several countries) which is (are) either the legitimate place(s) for the design, manufacturing, or consumption of this generic product.<sup>2</sup> Using aggregate data, country-product associations can be examined in light of set theory, sets of countries being projected on sets of products and vice-versa. Products as cognitive categories are associated with countries and countries are also associated with products as cognitive categories. The categorical approach can be used to elicit cognitive associations between products and countries, and analyze their typicality. A bundle of products or brands belonging to a product category may constitute a cognitive category in association with a particular country-of-origin (e.g. the brand names of luxury cars made in Germany).

Categorization may take place either way: countries may emerge in association with particular products given as stimuli (i.e. *product-country association*) or products may emerge in association with particular countries given as stimuli (i.e. *country-product association*). Exclusive associations (i.e. product A is only associated with country X and vice-versa), are probably rare in the full universe of product-country associations. Realistically, we cannot target exclusive associations only. *Product ethnicity* occurs when an association reaches a certain level both ways. Categorization also reflects national contexts: as noted above, product $\leftrightarrow$ country associations may differ cross-nationally. If product ethnicity is shared cross-nationally it becomes *global product ethnicity*. A caveat is needed: although strongly related to, product ethnicity is not the country-of-origin image of products. COO studies target the image of countries based on scales that generally use both product and country as combined stimuli and contain evaluative statements (often attribute-related) with a value judgment dimension. Product-country or country-product associations are unidirectional, based on a single stimulus, and they contain no evaluative dimension.

### ***Product $\Rightarrow$ country associations are related to product familiarity***

The literature presents two contrasting views of the use of COO as an extrinsic cue when evaluating a product or product class. Several authors support the view that COO influence over product evaluation and purchase decision making is more likely to be strong when consumers are not familiar with a product category (Eroglu and Machleit 1989, Cattin,

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<sup>2</sup> Ethnicity in the context of 'product ethnicity' should not be confused with the meaning given to it in consumer research, for example when 'ethnic consumption' refers to mixing home and host country consumption patterns.

Jolibert and Lohnes 1982, Maheswaran 1994). COO can then be seen as a proxy variable on the basis of which evaluation takes place, either because consumers have no knowledge of other criteria, or because COO helps them make a global assessment (Morello 1984). This view holds that greater consumer knowledge and familiarity with a particular product category tends to decrease the use of COO as an informational cue: expert consumers base their evaluations on the strength of actual product attributes whereas novices tend to rely more on the COO cue as such (Maheswaran 1994). Similarly, it has been proposed that limited product knowledge would lead consumers to make greater use of COO stereotypical images (Swinder and Rao 1997).

In contrast, several authors support the view that the degree of product knowledge and familiarity is positively related to the use of COO as an extrinsic cue (Johansson et al. 1985, Johansson and Nebenzahl 1986, Johansson 1989). Such findings are in line with recent research on brands showing that brand familiarity is positively related to the use of COO as a cue (Schaefer 1997, Phau and Suntornnond 2006). While a brand will normally be associated with a single COO, a product category will usually be associated with several COOs, for two main reasons: a product category comprises different products which may have different origins (e.g. cars made in Germany, USA, Japan), and the subcategories of COO relating to manufacturing, design, and brand, may relate to different countries. While a consumer highly familiar with a product category may not need to revert to COO as a cue for product evaluation purposes, he/she would likely tend to associate that product category with more than one country.

Past research has attempted to identify decision heuristics used by consumers, based on mental associations triggered by COO. Johansson et al. (1985) link the use of COO with a greater –rather than lesser- familiarity with product category. Han (1990) has tested the 'halo effect', which affects consumers' beliefs and (only indirectly) their evaluations, against the 'summary effect', where the COO cue directly influences consumers, in the form of a global evaluation. Han has shown that the 'halo effect' is used more when consumers are unfamiliar with the product category, whereas the 'summary effect' is used once they have achieved familiarity. According to Johansson (1989), increased familiarity with a product category reinforces the use of the COO as a choice attribute. We view product $\leftrightarrow$ country associations as being similar to a 'summary' cognitive process and expect therefore that:

**H1:** Product $\Rightarrow$ Country associations are positively related to product familiarity: The more familiar consumers are with a particular product, the more countries they associate this product with.

***Product⇒country associations are related to product involvement***

Rothschild (1979) identifies three types of personal involvement: enduring, situational and response. Only the first type is considered here and indicates the consumer's perceived personal relevance of a product (Zaichkowsky 1986), as applied to a product class (Bloch 1981). Consumer product involvement is likely to bear an influence on the intensity of product-country associations. Product involvement for particular products may differ according to countries, because of differences in consumer behavior, different levels of familiarity with particular generic products (demand side factors), and because most companies and brands do not cover all market areas (supply side factors). Moreover, cultural differences are reflected in the way private versus public consumption is viewed in different countries (Douglas and Isherwood 1979, Ger et al. 1993). Yang (1989) depicts the low involvement of Chinese consumers when products are used for private consumption and their high level of involvement when they buy products for their social symbolic value.

Generally speaking, a higher level of involvement with a product is reflected in the consumer's higher level of information processing (Mitchell 1979, Rothschild 1979) and is likely to stimulate a more complex knowledge structure (Andrews and Shimp 1990, Alba and Hutchinson 1987), as reflected, for instance, in the mental decomposition of COO into its cognitive sub-categories, related to manufacturing, brand, and design. This should result in consumers associating more countries with a particular product when their involvement is high. Hence we expect that:

**H2:** Product⇒Country associations are positively related to product involvement. The more involved consumers are with a particular product, the more countries they associate this product with.

***Country⇒Product associations are related to country familiarity***

Prior research has shown that consumers use country image as a salient choice attribute when they have feelings towards and knowledge of a particular country (Hong and Wyer 1989; Li and Monroe 1992; Maheswaran 1994). Johansson (1989) suggests that COO may be used by consumers to make global assessments of a product to simplify their decision-making process and save cognitive effort, particularly in cases where time to decide is short. When consumers have prior perceptions or beliefs about a country, COO tends to become a salient attribute. On the other hand, country familiarity does not necessarily bring about positive images. Travels

and visits in foreign countries do not always lead to favorable attitudes toward a country or its products (Papadopoulos and Heslop 1986, 1993; Ratcliffe and Griffin 1999). Similarly, in their study of product-country matches, Roth and Romeo (1992) find no significant influence of country familiarity on willingness to buy items from this country. However, associations are not evaluations, nor purchase intentions. They contain no value judgment as such. Our reasoning is that familiarity with a country will, *ceteris paribus*, lead to more cognitions, including those related to product knowledge, in the minds of consumers when they are presented with the country stimulus. Indeed, when activated, COO cognitive categories help generate multiple associations. In the same way as a product category may be associated with different COO's, a given country with which consumers are familiar may be known to develop, manufacture, design, and/or brand different kinds of products, leading consumers to associate that country with these products. Hence, we expect that:

**H3:** Country $\Rightarrow$ Product associations are positively related to country familiarity.

***Potential impact of context-centered association tendencies on associations between products and countries***

As respondents are more familiar with their own country than with others, the familiarity dimension is also likely to strengthen the self-reference process. Respondents from a particular survey country should associate their country more frequently than other countries with product stimuli. Likewise, respondents may tend to associate more products with their own country than with other stimulus countries because they are exposed to local manufactures and brands, and they are more knowledgeable about and familiar with domestic products. We call this leaning for self-centered country $\leftrightarrow$ product associations, context-centered association tendencies (CCATs). CCATs relate to the spontaneous tendency of people to use their own frame of reference, the local knowledge found in their ingroup to make judgments (i.e., the self-reference criterion in Lee 1966), in our case associative judgments. CCATs reflect a positive 'domestic country bias', in favor of one's own country and domestic products (Balabanis and Diamantopoulos 2004). The domestic country bias is related to ethnocentrism, defined as the natural tendency to view one's own group as the center of the universe (i.e. the sociological concept defined by Sumner (1906) and expounded by Levine and Campbell 1972). However, CCATs are not directly related to 'consumer patriotism' (Han 1988), or to 'consumer ethnocentrism' (Shimp and Sharma 1987; Netemeyer et al. 1991) defined as the belief held by consumers about the appropriateness and morality of purchasing foreign products. Consumer ethnocentrism may negatively influence foreign

product evaluation: ethnocentric consumers tend to think that imported products hurt the domestic economy and cause job losses. The present study focuses on associations rather than evaluations, that is, connections without value judgments. Therefore mere ‘ethnocentrism’ rather than ‘consumer ethnocentrism’ should have an impact on product ethnicity scores through CCATs. From that perspective, ethnocentrism is viewed here as the context-centered tendency to associate products with one's own country, and not from the perspective of consumer ethnocentrism as in the CETSCALE (Shimp and Sharma 1987), widely used in COO research. Therefore:

**H4:** Respondents display context-centered association tendencies (CCATs). When presented with a product stimulus, they associate products more often with their own country than with other countries (**H4a**); When presented with a country stimulus, they associate more products with their own country than with other countries (**H4b**).

As emphasized by Balabanis and Diamantopoulos (2004), the domestic country bias is contingent on product category. Product ethnicity is likely to be a cue that activates Context-centered association tendencies. If a particular product is viewed by consumers as quite typical of a particular foreign country (i.e. ‘ethnic’), the likelihood of it being associated with their own country should decrease. Consequently, the strength of CCATs should be reduced. Conversely, products that are viewed by consumers as quite untypical of a particular country (i.e. ‘neutral’) are natural targets for context-centered associations, local consumers ignoring – or underestimating – possible associations with foreign countries. Hence, we expect that:

**H4c:** Context-centered association tendencies (CCAT) are stronger in the case of less ethnic (more neutral) products.

#### ***Contrast between individualistic and collectivistic countries***

Cultural orientation, especially the collectivism/individualism divide, may influence how people process information: heuristic processing may be more frequent and systematic processing more limited in collectivist cultures (Aaker and Maheswarwan 1997). Gürhan-Canli and Maheswaran (2000) show that collectivists tend to evaluate home products more favorably, regardless of product superiority, contrary to individualists who evaluate home products more favorably only when they are superior. If we equate ‘association’ with ‘evaluation’ (i.e. assuming that the associative statement contains an implicit positive evaluation), this would mean that collectivists would favor their own country for association when presented with a particular product, irrespective of whether this product is superior or

inferior to foreign competitors. If we follow this line of reasoning, collectivists would associate products with their own country more spontaneously and more frequently than individualists do, irrespective of product category. However, the particular empirical case for a collectivist country (i.e. Japan, a developed collectivist country) being presented in Gürhan-Canli and Maheswaran (2000) is the exception rather than the rule, for two reasons: 1/ it is the only rich, industrialized country classified as collectivist; 2/ its individualism score (46) is above world average (43) making it doubtful whether it really is a typical collectivist country. Indeed, collectivism has been shown to be closely related to the level of economic development (correlation between individualism and GNP/capita being .70; see Hofstede 2001). The COO literature provides ample evidence that home products are better evaluated in developed countries with individualist cultures than are foreign products (Jaffé and Nebenzahl 2001). Conversely, the attitude towards foreign products is rather ambiguous in developing countries (mostly collectivist cultures, the percentage of collectivist cultures among developing countries being more than 90%; see Hofstede 2001) – they tend to disfavor their own products. There are convergent findings that consumers in developed, collectivist countries hold a lower image of domestic as compared to imported products (for a review, see Jaffe and Nebenzahl 2001; for India, see Batra et al. 2000; for Turkey, see Ger et al. 1999; for Mexico, see Bailey and Amin Gutierrez de Pineres 1997). Hence, we expect that:

**H5a:** Context-centered association tendencies are stronger in individualist countries than in collectivist countries

As argued by Balabanis and Diamantopoulous (2004, p. 82) ‘consumer bias against foreign products will not be uniform, but will vary depending on the product *specific* origins. Indeed in some cases, consumers may favor foreign products over domestic ones.’ In collectivist countries, home country products, seen as typical of the ingroup, may be evaluated more favorably because of the strong ties exhibited to family, group, and country. Indeed the collectivist self is interdependent rather than independent (Markus and Kitayama 1991) with the consequence that ingroup-related attitudes are stronger in collectivist than in individualist countries. For collectivists, local-ethnic products are part of the ingroup. They are cultural artefacts which are strongly associated with ways of life specific to the ingroup. Conversely, non local-ethnic are perceived as strongly foreign and, as such, quite clearly belonging to outgroup cultural artefacts. As a consequence, we expect people in collectivist cultures to hold strong product stereotypes when products are perceived as outgroup. Conversely, in individualist cultures, less stereotypes are found when products are perceived as outgroup

resulting in lower levels of product $\leftrightarrow$ country associations for non local-ethnic products (e.g. watches for non Swiss respondents). Therefore, we expect that:

**H5b:** Stereotyping for products seen as typical of the *outgroup* is stronger in collectivist than in individualist countries, resulting in significantly higher levels of product $\Rightarrow$ country associations for those products.

***Global product ethnicity reflects country image in terms of manufacturing, design, and brand***

At the start of COO research, country-of-origin was considered as the *Made-in country* (Nebenzahl et al. 1997), or the COM, country-of-manufacture (see the review by Samiee 1994), that is, the country which appears on the “made-in” label, generally the country where final assembly takes place. Other concepts have progressively emerged in the COO literature, such as Country of design (COD) or DCI (*Designed-in-Country Image* in the review by Nebenzahl et al. 1997), which is the country where the product was designed and developed. With multinational production, there has been a growing discrepancy between COMs and CODs (Johansson and Nebenzahl 1986). Moreover, global companies tend to manipulate brand names to suggest particular origins (COB, country-of-brand effects, see Leclerc et al. 1994). Thus, country-of-origin has been more and more considered as that country which consumers typically associate with a product or brand, irrespective of where it is actually manufactured.

Product ethnicity (i.e. for a particular *generic* product) is related to a country being viewed by consumers as a legitimate origin in terms of country-of-design (COD), that is, the product originates in this country, is based on high quality local inputs, or there is local knowledge and professional expertise in terms of product development, local consumers greatly value this product, the product is related to local history and culture, etc. This is what Roth and Romeo (1992, p. 482) call a ‘product-country match’, that is, ‘when the perceived strengths of a country are important product features or benefits for the particular product category.’ Product ethnicity is related to COM cues, that is, the country is or has been home to large manufacturers, has had or still has a significant share of world production, manufacturing expertise in this country is worldwide renowned, this country produces both product and equipment for its manufacturing, is famous for its quality control, etc. (Srinivasan et al. 2004; Hamzaoui and Merunka 2006). Product ethnicity is also related to COB, that is, to a country being home to global brands, to brands congruent with the local language (e.g. Smirnoff for

Vodka), to a brand name that has become the generic name, etc. (Leclerc et al 1994; Dodds et al. 1998; Srinivasan et al. 2004; Samiee et al. 2005). Hence, we expect that:

**H6:** Global Product Ethnicity (GE) reflects strong matches between country and product across survey countries, on one or several of 3 dimensions: manufacturing, design, and brand.

***Does COO congruence with product ethnicity influence willingness-to-buy?***

Products have intrinsic (appearance, quality, ...) and extrinsic (price, ...) characteristics, all of which may serve as evaluation criteria, with the relative importance of COO shifting from case to case (Erickson et al. 1984). Price (Nebenzahl and Jaffé 1989), store (Morganosky and Lazarde 1987), perceived risk (Lupkin et al. 1985), and other cues have been shown to combine with the COO cue in shaping consumer evaluation of products (for reviews, see Papadopoulos and Heslop 1993; Jaffé and Nebenzahl 2001). Meta-analyses (Peterson and Jolibert 1995; Verlegh and Steenkamp 1999) have started to question the real influence of COOs on consumer decisions. In their meta-analysis based on 52 COO studies, Peterson and Jolibert (1995) have shown that the mean effect of a product's COO is .30 with respect to perceived product quality and reliability but only .19 with respect to purchase intention. In another meta-analysis of COO research, Verlegh and Steenkamp (1999) confirmed that COO has a much larger effect on perceived quality than on attitude toward the product or purchase intention. Samiee et al. (2005) conclude that 'past research has inflated the influence that country-of-origin information has on consumers' product judgments and behavior and its importance in managerial and public policy decisions.' (p. 379). In the same vein, Ulgado and Lee (1998) show that American as well as Korean consumers use information related to key product attributes, rather than COO information, to form their purchase intentions. There is now a body of evidence showing that consumers may not attach as much importance as previously thought to COO especially in final phases of the purchase cycle (purchase intention, actual buying behavior).

However, general evaluations of purchases made in a particular country (whatever the particular product being considered) cannot be confused with product-country matches. Roth and Romeo (1992) test for willingness to buy related to product-country match and they provide convincing evidence of higher willingness to buy items for which there is product-country matches based on evidence from U.S., Mexican, and Irish respondents. Although the literature provides mitigated evidence about the importance of COO in decision making, product ethnicity (PE) may be an identity cue from which inferences about quality, status

symbol, etc. may be made, influencing consumers' willingness to buy. Although willingness to buy is a step away from intention to buy, it reflects the consumer's readiness to act. It clearly relates to the "consideration (or evoked) set" stage in the brand categorization process (Brisoux and Laroche, 1980), at which the consumer clearly identifies the few brands to choose from in the case of a purchase. By analogy, brand categorization theory can apply to product ethnicity. While the link between COO and intention to buy or actual purchase may be mitigated, it is expected that high PE, that is, a high degree of congruence between a product and a country-of-origin and its cognitive dimensions related to manufacturing, design, and brand, will be positively related with high levels of willingness to buy. In the absence of specific product attributes, consumers' judgments about a product category may be based on perceptions of risk, uncertainty, trust, related to a given origin, discouraging consumers from considering a purchase perceived to be non-congruent in terms of product↔country match. Therefore, we expect that:

**H7:** Willingness to buy a particular product is positively related to the degree of congruence between its country-of-origin and its product ethnicity.

## Study 1

### III – Exploring associations made by consumers between products and countries

#### *Sample and survey method*

The purpose of this exploratory investigation is to measure binary product-country and country-product associations. A total sample of 340 respondents was used across the five survey countries. National quota samples (50 respondents in France, 50 in Great Britain, 52 in Germany, 52 in Tunisia, and 136 in Canada) were derived on the basis of sex and age, with 5 age groups ranging from 20-25 to 60 and up. Data collection took place in several public places in order to avoid over/under representing some social classes or socio-economic characteristics.<sup>3</sup>

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<sup>3</sup> Data was first collected in Britain, France, Germany, and Tunisia and later only in Canada (2 years later). In France, Great-Britain, Germany, and Tunisia, quota sampling was used based on the general population. Interviewees were instructed to have 10% of their interviewees (5) in each of 10 gender x age category, with 5 age groups (20-29, 30-39, 40-49, 50-59, 60 and up). In Canada, the sample was based on continuing education students at an English-speaking university in Montreal. Respondents were 65% male and 35% female; the average age was 34 with a standard deviation of 8.1 years of age. In France, Great-Britain, Germany, and Tunisia, interviewing was face-to-face with the interviewer asking questions and filling in the questionnaires based on the respondent's answers. The public places were stores and train stations. Samples and data collection

The questionnaire was divided into two sections. Country-product associations were measured in the first part where country stimuli were provided. The second part measured Product-country associations (where product stimuli were given). In order to avoid sequence-related bias, sections were order-reversed for half of the respondents.

For product-country measurements, the general question was: “For each product listed below, which countries do you spontaneously associate them with? For example, oil may evoke Saudi Arabia. If no association comes to mind, move on to the next product”. 20 products were listed as reported in Table 1. They were selected on the basis of their likely low–high degree of product ethnicity and to reflect a wide array of products used in COO research, mostly in the category of frequently purchased goods<sup>4</sup>. Respondents could list up to 4 countries per product.

For country-product measurements, a similar question was: “For each country listed below, what products do you spontaneously associate them with? For example, Ireland may evoke Guinness beer and woolen sweaters. If no association comes to mind, move on to the next country”. 18 countries were listed as reported in Table 1. Most of them represent important production/manufacturing origins across diverse geographic areas<sup>5</sup>. Respondents could list up to 4 products per country-of-origin.

[Insert Table 1 here]

The choice of survey countries was driven by a particular interest in Western Europe as well as the possibility to elicit contrasting views from different cultural environments, namely North Africa and North America. Five survey countries were retained, France, Germany and Great Britain for Europe, Tunisia for North Africa<sup>6</sup> and Canada for North America. The original questionnaire was developed in French (for administration in both France and

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methods in Study 1 were comparable across the first four countries; however, not with the fifth country, Canada, where the instrument was self-administered in classroom settings with one of the authors introducing the task.

<sup>4</sup> The selected products have been used in many COO studies as stimuli (Usunier 2005), cars and consumer electronics (sound systems) in more than 30% of COO studies, textile, apparel (jeans) and shoes in almost 30% and non food consumer goods (cosmetics, watches, bicycles) in 23% of COO research. 11 products out of 20 were in the Food and Beverage product category (more than 20% of products considered in COO research) because associations with countries are potentially stronger for such culture-bound products.

<sup>5</sup> Belgium, Brazil, Canada, China, France, Germany, Great-Britain, India, Italy, Korea, Japan, the Netherlands, Poland, Russia, Spain, Sweden, Switzerland, and the United States are among the top 25 COOs considered in COO research (Usunier, 2005). The choice of Tunisia as a possible COO is the exception due to the insistence of local data collectors that the survey would be more credible if the country was proposed as a COO. Furthermore, we had to include countries of survey as COOs in order to measure context-centered association tendencies.

<sup>6</sup> The choice of Tunisia as a survey country is due to the relatively high marketing intensity of the country (both in terms of marketing institutions such as advertising agencies and research companies, and marketing education).

Tunisia) and translated into English (for administration in both Britain and Canada) and German using back translation to ensure translation equivalence (Van de Vijver and Leung 1997). Few adjustments were necessary, given the simplicity of the original wording. Separate databases of product-country and country-product associations were developed for each survey country. All associations were included, even those mentioned by only one respondent. Tabulations were then derived for each listed product and each listed country-of-origin separately.

### ***Measuring an association's degree of dispersion***

Measuring product ethnicity requires estimating the degree of dispersion among product-country associations made by respondents in order to check whether a particular country-of-origin is dominantly associated (vice-versa for country-product associations). Appendix 1 presents four standard dispersion measures (Lewis-Beck 1993) ranging from 0 to 1 (0 being the weakest dispersion, thus the strongest association). In a product-country context, measurement is based on the frequency with which a particular country-of-origin/product ( $p_k$ ) is mentioned by respondents in association with a given product/country-of-origin.

Dispersion indices were calculated for wine and bicycles as these products were assumed to differ in levels of product ethnicity (high for wine, low for bicycles). Indeed, 824 product-country associations were made for wine in the overall sample: France was cited 298 times, Italy 171 times, Spain 69 times, Germany 60 times, etc. 428 product-country associations were made for bicycles, 2/3 of which were spread more or less equally across the Netherlands, China, France, and Germany. Overall, dispersion indices were slightly lower for wine than for bicycles, indicating that wine is somewhat more ethnic. However, the contrast appeared to be much weaker than expected: estimates based on dispersion indices did not reflect a strong product-country association for wine although France was associated with wine by close to 80% of respondents in the five survey countries. For bicycles, looser associations with a larger number of countries nevertheless resulted in misleadingly high levels of product ethnicity when measured by dispersion indices. Standard dispersion indices helped reveal the lack of exclusivity in associations (for instance, while Vodka was associated with Russia by 90% of respondents, 50 respondents also associated it with Poland and 8 with Sweden). However, respondents underemphasized the dominant product-country linkage by giving too much weight to a product's multiple country-of-origin associations. Standard dispersion indices did not clearly discriminate between highly ethnic and more neutral products. Measures which better operationalize product ethnicity were therefore needed.

### ***Operationalization of product ethnicity***

To overcome the limitations of dispersion indices, specific association measures were developed. They account for product ethnicity direction (product $\Rightarrow$ country, country $\Rightarrow$ product or bi-directional), association intensity, degree of exclusiveness, and degree of globality (i.e. this association is shared across survey countries).

The following notation is used:

- $i$  product  $\in [1; I]$
- $j$  country-of-origin  $\in [1; J]$
- $k$  survey country  $\in [1; K]$
- $l$  particular product for which a product ethnicity score is calculated
- $m$  country-of-origin for which a product ethnicity score is calculated
- $N$  number of respondents across the survey countries
- $N_k$  number of respondents in survey country  $k$
- $n$  number of modalities cited either for a product  $i$  or a country-of-origin  $j$

### ***Simple product-country and country-product associations***

These scores reflect basic associations made by consumers between countries and products either by associating countries with particular products (product-country association) or by associating products with particular countries-of-origin (country-product association).

The overall product-country association score ( $A_{i,j}^{pc}$ ) is :

$$A_{i,j}^{pc} = \frac{\sum_{k=1}^K f_k^{i,j}}{N}$$

where:

$A_{i,j}^{pc}$  = product-country association for product  $i$  and country-of-origin  $j$

$f_k^{i,j}$  = number of times country-of-origin  $j$  is associated with product  $i$  by respondents of survey country  $k$

Product-country associations are defined over the range  $[0;1]$ . The higher the degree of association, the closer it is to 1. For instance, when measured across survey countries, product-country associations for chocolate are .69 for Switzerland, .55 for Belgium, .21 for France, .11 for Germany, other associations being below .1.

The country-product association score ( $A_{j,i}^{cp}$ ) is derived somewhat differently. Respondents find it easier to associate countries-of-origin with a product given as basic stimulus than to associate products with a country-of-origin given as basic stimulus. The formula below aims to adjust for the relative weakness of product-country associativeness.

$$A_{j,i}^{cp} = \frac{\sum_{k=1}^K f_k^{j,i}}{K \times \max(f_k^{j,i})}$$

where:

$A_{j,i}^{cp}$  = country-product association for country-of-origin  $j$  and product  $i$

$f_k^{j,i}$  = number of times product  $i$  is associated with country-of-origin  $j$  by respondents of survey country  $k$

$\max(f_k^{j,i})$  = highest number of times a survey country  $k$  associates a product  $i$  with a country-of-origin  $j$ , across all  $K$  survey countries.

For instance, across the 5 survey countries in Study 1, wine is most importantly associated with France (109 times) by Canadian respondents. The total number of France-Wine associations throughout survey countries, is divided by 5 times the maximum number of associations ( $5 \times 109 = 545$ ).

As for product-country, country-product associations range between 0 and 1. For instance, wine's country-product association is .83 for France, .32 for Italy, .30 for Spain, and less than .10 for other countries. Chocolate's country-product association is .75 for Belgium and .56 for Switzerland, other associations being below .05. Often, the country-product association score is weaker than the corresponding product-country association score. This suggests that the "product" stimulus is more natural to respondents than the "country-of-origin" stimulus. For instance, the country-product association USA-jeans is .83 when associating the USA with jeans as a stimulus, but only .39 when associating jeans with USA as a stimulus.

### ***Product ethnicity (product-country and country-product)***

$A_{i,j}^{pc}$  and  $A_{j,i}^{cp}$  reflect the intensity of associations. However they do not inform on the degree of exclusivity of the association in terms of countries-of-origin. Product ethnicity (PE) accounts for an association's degree of exclusivity by taking into account both the association

with a target country-of-origin  $m$ ,  $A_{i,m}^{pc}$ , and the associations with other, non-target, countries-of-origin ( $A_{i,j}^{pc}$ , where  $j = 1, \dots, j \neq m, \dots, n$ ). PE scores are the square root of the difference between the squared target association and the sum of squared non-target associations divided by  $n-1$ . PE can be measured in both directions (product $\Rightarrow$ country and country $\Rightarrow$ product), as shown below.

$$PE_{i,m}^{pc} = \left[ A_{i,m}^{pc\ 2} - \frac{\sum_{j=1, j \neq m}^n A_{i,j}^{pc\ 2}}{n-1} \right]^{1/2}$$

where:

$PE_{i,m}^{pc}$  = product-country ethnicity for country-of-origin  $m$  associated to product  $i$

$A_{i,m}^{pc}$  = product-country association of country-of-origin  $m$  to product  $i$

$A_{i,j}^{pc}$  = product-country association of country-of-origin  $j$  to product  $i$ , where  $j = 1, \dots, j \neq m, \dots, n$

$$PE_{j,l}^{cp} = \left[ A_{j,l}^{cp\ 2} - \frac{\sum_{i=1, i \neq l}^n A_{j,i}^{cp\ 2}}{n-1} \right]^{1/2}$$

where:

$PE_{j,l}^{cp}$  = country-product ethnicity for product  $l$  associated to country-of-origin  $j$

$A_{j,l}^{cp}$  = country-product association of product  $l$  to country-of-origin  $j$

$A_{j,i}^{cp}$  = country-product association of product  $i$ , where  $i = 1, \dots, i \neq l, \dots, n$

As for basic associations, PE scores range between 0 and 1, their value being closer to 1 when  $A_{i,m}^{pc}$  or  $A_{j,l}^{cp}$  largely dominate other associations. PE scores come close to zero if both basic associations (product-country and country-product) are low. For bicycles, the Netherlands ranked only third with a product-country association of .14. Conversely, bicycles were most frequently associated with the Netherlands, resulting in a country-product association of .72. PE scores should therefore be calculated in both directions,  $PE^{pc}$  and  $PE^{cp}$ .

### ***Global product ethnicity***

Global product ethnicity (GE) combines all association characteristics, i.e. GE summarizes the extent to which a particular association is:

- bi-directional, product-country and country-product,
- relatively exclusive with regard to associations with other countries-of-origin,
- shared by consumers from different national contexts, that is, across survey countries,

Global product ethnicity can thus be derived as a geometric mean of product ethnicity scores:

$$GE_{l,m} = [(PE_{j,l}^{cp})(PE_{i,m}^{pc})]^{1/2}$$

For global product ethnicity scores to make sense, there needs to be relatively large product ethnicity scores in both direction (although a particularly strong product A-country B association may not be exactly matched by a correspondingly strong country B-product A association). Thus, global product ethnicity for bicycles, a relatively ‘neutral’ product, is only pertinent in the case of the Netherlands, at .40. For some products, several GE indices can be usefully derived, such as for beer (.75 for Germany and .27 for Belgium) or for cheese (.54 for France, .36 for the Netherlands and .34 for Switzerland). For products having a close fit with national contexts, GE scores reflect well-established stereotypes, such as watches and Switzerland (.77), or wine and France (.84).

### ***Empirical results for study 1***

An account of product ethnicity scores for different products is given below. 67 countries were listed by respondents in association with 20 product-stimuli. Considering only association scores above .30, Germany, Japan and the USA are significantly associated with cars, France and the USA with cosmetics, and France and Italy with wine. Some associations are exclusive such as Germany with beer, Russia with vodka, or Switzerland with watches. Conversely, some products have no association above .30 with a country-of-origin, such as vacuum cleaners. 149 products were listed by respondents in association with country stimuli. Part of the explanation for this rather large number lies in the discrepancy between the vast product base and the limited number of countries to choose from. Considering associations above .30, multiple-country associations can be found for some products: wine with France and Italy, beer with Germany and Belgium, cars with Germany, Japan, the USA and Korea, etc. Although some of these associations are higher than most others (France–wine, Belgium–chocolate, Germany–cars), they are not exclusive. Associations between Switzerland and

watches, Brazil and coffee, Sweden and pine furniture are exclusive. Finally, some countries remain weak references in respondents' minds as no product is significantly associated with them (e.g. Poland, Portugal).

### ***Product ethnicity estimates***

Table 2 reflects the strength of product-country and country-product associations. In some cases, a single country-of-origin stands out in association with a product: France with cosmetics ( $PE_{pc} = .72$ ,  $PE_{cp} = .56$ ), Italy with pasta ( $PE_{pc} = .87$ ,  $PE_{cp} = .70$ ) and shoes ( $PE_{pc} = .70$ ,  $PE_{cp} = .60$ ), Japan with sound systems ( $PE_{pc} = .74$ ,  $PE_{cp} = .56$ ), Russia with vodka ( $PE_{pc} = .88$ ,  $PE_{cp} = .74$ ), the USA with jeans ( $PE_{pc} = .83$ ,  $PE_{cp} = .039$ ), Brazil with coffee ( $PE_{pc} = .68$ ,  $PE_{cp} = .75$ ), Sweden with pine furniture ( $PE_{pc} = .32$ ,  $PE_{cp} = .47$ ). Some product ethnicity scores are relatively strong in one direction but weak in the other, such as beer–Belgium, bicycles–Netherlands, or vacuum cleaners–Germany. Moreover some scores in Table 2 reveal wide differences in associations according to respondent nationality. Finally, some scores are low because fewer survey countries or few respondents in each survey country made this association, such as for yoghurt–Germany, yoghurt–Switzerland, cars–France, or airplanes–Great Britain.

[Insert Table 2]

### ***Global product ethnicity scores***

Table 2 also presents global product ethnicity scores. The first case is that of clearly *global ethnic products* for which a strong association ( $> .50$ ) is confirmed with a particular country-of-origin, such as wine with France, vodka with Russia, watches with Switzerland, pasta with Italy, and to a lesser degree shoes with Italy, sound systems with Japan, jeans with the USA, and cosmetics with France. The second case is that of *multi-ethnic products*, with several sub-models:

1. the 'regional model' (e.g. cheese) in which several countries from the same geographic area (Europe) share global product ethnicity;
2. the 'triad model' (e.g. cars) in which one country in Europe, in Asia, and in America share global product ethnicity;
3. the 'duopoly model' (e.g. beer, chocolate) in which two countries share global product ethnicity (Germany/Belgium for beer, Belgium/Switzerland for chocolate);

4. the 'production/consumption' model (e.g. tea), where global product ethnicity is shared by production countries (i.e. China, India) and a transformation/consumption country (Great Britain).

The third case is that of products with a single but hazy global product ethnicity (ranging between .30 and .50), such as bicycles-Netherlands, spring water-France, airplanes-USA, and pine furniture-Sweden. The last case (probably the most frequent in practice if all products are considered) is that of 'neutral products' with relatively low global product ethnicity (<.30) such as yoghurt and vacuum cleaners. Neutral products may be the consequence of weak product-country and country-product associations across survey countries. It may also be the result of context-centered association tendencies (CCATs), as described below, when respondents from several countries tend to associate a product much more closely with their respective countries than with others, and vice-versa.

#### ***Initial check for the presence of context-centered association tendencies***

To check for context-centered association tendencies, bilateral t-tests for independent samples were conducted to compare (1) the percentage of respondents from a given country associating a product with their country, and (2) the percentage of respondents from all other survey countries making that same association. 16 such associations covering different products and countries were selected for the test. All cases (15) but one show significantly higher ( $p < .05$ ) home country associations with the exception of the tea-Britain association for which British respondents associate tea with their own country significantly less than respondents from other survey countries.

## **Study 2**

### **IV – Measurement and data collection for product ethnicity and related constructs**

#### ***Product / Country Familiarity and Product Involvement scales***

Familiarity was measured using Kent and Allen's (1994) 3-item bi-polar scale (familiarity, experience, knowledge) with reliability above .85. A 5-point semantic-differential scale was used to measure the 3 items, with respect to each product (when measuring product familiarity), and each country (when measuring country familiarity): 'familiar/unfamiliar', 'experienced/inexperienced', 'knowledgeable/not knowledgeable'.

Involvement was measured using Foote, Cone and Belding's modified 3-item FCBI scale developed by Ratchford (1987) and Vaughn (1986). This scale emphasizes involvement in the purchase decision for a particular product. The original 30-item scale was progressively reduced to 11, then to 3 items after multiple testing across 5 different studies with internal consistency estimates (Cronbach alpha) ranging from .94 to .97 (Ratchford 1987). A measure of consistency for the product ratings provided high estimates ranging from .84 to .96 (Ratchford 1987). A 5-point semantic-differential scale was used to measure the 3 FCBI items, with respect to each product considered in Study 2 with the following polar texts: 'very important/very unimportant decision', 'decision requires a lot/little thought', 'a lot/little to lose if wrong choice of brand'.

### ***Choice of survey countries, countries-of-origin, and product stimuli***

The four survey countries (China, Germany, Mexico, and the United States) were chosen because 1/ they are frequent survey countries in COO studies; 2/ they are important economies in terms of size (GNP); 3/ they offer a contrast between two Western, developed countries with individualist cultures (Germany and the United States) and two quickly developing economies with collectivist cultures (China and Mexico), a contrast required for testing H5a and H5b; 4/ they represent different continents in the triad (America, Asia, and Europe). The six countries chosen as COO stimuli for the second part of the survey instrument are: China, France, Germany, Japan, Mexico, and the United States. Four of these countries are also countries of survey, an overlap required for measuring CCATs. Japan and France were selected because they are respectively the second and the fourth most considered countries in COO studies with the U.S. and Germany being the first and the third most frequently used as COO stimuli (Usunier, 2006). As emphasized above, all 6 COOs were selected because they are large contributors to international trade and they have often been used as typical origins in country-of-origin research.<sup>7</sup>

The six products (i.e. cars, cosmetics, sound systems, shoes, vacuum cleaners, and wine) were selected because of their importance in COO studies: cars are used as product stimulus in 31% of COO studies, non-food consumer goods (e.g. cosmetics) in 24%, consumer electronics (e.g. sound systems) in 31%, textile, apparel and shoes in 30%, household appliances (e.g. vacuum cleaners) in 12%, and food and beverages (e.g. wine) in 22% of COO

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<sup>7</sup> In addition, it was thought that industrialized as well as less-developed countries should be represented, as recently conducted research provides some ground to believe the degree of industrialization of a country may help explain its consumers' reaction toward product COO (Batra et al., 2000). Further, geographical dispersion was thought necessary to control for possible regional confounding effects.

studies (Usunier, 2006). Both ethnic and neutral products were selected: four products have been shown by Study 1 to display relatively high levels of product ethnicity chosen (i.e. cars, cosmetics, sound systems, and wine) and two product categories correspond to relatively 'neutral' products that have been shown by Study 1 to display low levels of product ethnicity (i.e. shoes and vacuum cleaners).

### ***Survey instruments***

Two questionnaires were developed to investigate both product-country and country-product associations based on a smaller number of preset associations compared to Study 1. The first part of the questionnaires dealt with association tasks (associations between countries and products or associations between products and countries) which respondents were invited to make with the following introduction « For each product(country) listed below, name up to 4 countries(products) that you consider to be major countries-of-origin. ». Part 1 was based on only one stimulus, either product or country. The second part dealt with why people make such associations and offered the possibility to tick three reasons for associations related to manufacturing, design, and brand for each product-country association. Part 2 of the questionnaire presented 3 stimuli in combination: product (6 products mentioned above), country (6 COOs mentioned above), and attributes (manufacturing, design, and brand). The invitation to the association task was phrased as follows: « Several product–country (country–product) associations are suggested below. For each possible association, please indicate your perception of its intensity, relative to manufacturing (or production), design and brand, by ticking each box, which you believe reflects a strong association». The third part aimed to assess respondent product familiarity (or country familiarity for the questionnaire starting from a country stimulus in part 1) and involvement with each product category (common to both versions). The last part of the questionnaire retrieved basic demographics, that is, gender and age, as well as nationality (at birth, now), and native language. This information was intended to check the consistency of membership in the national group.

### ***Data Collection and sampling: cross-national equivalence issues***

Product-country doublets are subject to ordering effects between stimulus and response at data collection. That is why a *country-product* and a *product-country* association cannot be considered as mere equivalents since they follow reversed stimulus-response orders. We chose split sampling to avoid the transfer of associations from P-C to C-P or vice versa, which

naturally occurs when the same respondent completes both association tasks<sup>8</sup>. Samples of about 150 respondents per survey country, 75 per association task were used.

Data was collected in four countries which were consistently used in the survey instruments as COO stimuli: China and Mexico (collectivistic countries), Germany and the United States (individualistic countries). The original survey instrument was written in English and translated into the three target languages (Chinese, German, and Spanish) by bilingual native speakers of the target language following recommended procedures for achieving translation equivalence (Van de Vijver and Leung 1997). The researchers examined discrepancies between the original and the back-translated English versions with the translators and solved any translation-related issue. When checking for conceptual equivalence, slight decentering of the source instrument (Campbell and Werner 1970) was necessary in the wording of the sentence « please indicate the level of your personal *involvement* ... » since the concept of « involvement » has no equivalent in either Spanish or German<sup>9</sup> The phrase was changed for all language versions into "please indicate the way you feel about the product."

National samples have to be equivalent. In all countries a self-administered questionnaire was available in 2 versions, one requiring associations between countries and products, the other requiring associations between products and countries. The time required was approximately 10 minutes. Student samples were used because they are more cross-culturally comparable. Furthermore, data collection in China is subject to wide cross-generational variations in familiarity and involvement with foreign products and brands due to rather recent exposure to global brands and products. Chinese translators indicated that younger people should be targeted for relevance. As a consequence, we chose to do this for all four national samples. The number of respondents is 74 (P-C) and 72 (C-P), for China (mean age: 22); 63 (P-C) and 71 (C-P) in Germany (mean age: 25.5); 89 (P-C) and 89 (C-P) in Mexico (mean age: 23); 108 (P-C) and 116 (C-P) in the United States (mean age: 28). Female respondents represent 68% in China, 42.7% in Germany, 52.2% in Mexico, and 58.7% in the United States.

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<sup>8</sup> Changing the task order for half the sample as done in Study 1 doesn't solve the problem: the order effect is corrected, but not the "infectious" effect. This appears as a potentially serious problem: having associated cars with Italy will naturally prompt some respondents to associate later Italy with cars, whereas the associations may otherwise naturally result from a different mental processing: being given Italy as a stimulus, a respondent would think "what is Italy good at? What makes the image of Italy strong?": that may not be cars. Given cars as a stimulus, a respondent would think "where are cars manufactured?": Italy could come out strong. Remembering having previously associated cars with Italy or vice versa, might pollute the next association task.

<sup>9</sup> Especially in Spanish, the concept of *implicacion* translates into the English word "implication" which relates to being involved in a crime, thus possibly conveying a negative connotation, a value judgment that does not exist for the neutral concept of "involvement" in English.

## V – Data analysis and empirical findings of Study 2

### *Data analysis*

Data analysis is based on three types of endogenous variables: the total number of associations made by respondents for particular country or product stimuli (from 0 to 4), mean CCAT or GE scores for particular national groups for strong ‘product-country matches’ inferred from Study 1 and Study 2 (continuous between 0 and 1), or individual associations made by respondents for particular country-product associations (binary, 0-1). For H1 to H3, the variable to be explained is the total number of associations made by each respondent for each product or country stimulus, that is, 2004 observations for product⇒country associations (6 product stimuli x 334 respondents), and 2088 observations for country⇒product associations (6 country stimuli x 348 respondents for H3). For H4a, we compare 24 correlation coefficients between product-country associations and nationality when COO is the respondent’s own country to 72 correlation coefficients between product-country associations and nationality when COO is not the respondent’s country. H4b, H4c, and H5a are based on the mean scores of national groups corresponding to survey countries for product CCATs as defined in appendix 2. The endogenous variable for H5b is global product ethnicity for particular products that can be seen as typical of the outgroup in all survey countries, both collectivistic and individualistic. Finally, H6 is based on a logistic regression where the dependent is the association made or not by respondents for the 10 strongest global product ethnicity scores (above .4), that is, 3340 for product-country associations (10 x 334 respondents), 3480 for country-product associations (10 x 348 respondents), and 6820 observations when associations in both directions are considered simultaneously.

### *Findings of Study 2*

The first step in data analysis for study 2 is to derive which of the 36 possible associations between products and COOs provide non-zero global product ethnicity (GE) scores. GE scores were calculated for the six products (cars, cosmetics, sound systems, shoes, vacuum cleaners, and wine) and six countries-of-origin (China, France, Germany, Japan, Mexico, and the United States) based on the data from the four survey countries (China, Germany, Mexico, and the United States). Table 3 presents product-country, country-product, and global product ethnicity scores. 21 GE scores are .00.

[Insert Table 3 here]

The test for hypotheses H1 and H2 is based on linear regression where the dependent variable is the number of countries associated when a particular product stimulus is used (2004 observations) and the independent variables are the level of product familiarity and involvement for this product, gender, and respondent nationality (as control variables). The scales are reliable for each product and for both concepts across all respondents. For product familiarity, Cronbach alphas range from .87 to .95 across the 6 product categories. For product involvement, Cronbach alphas range from .77 to .85 with the exception of cars involvement at .67. Cross-cultural invariance of all scales across national groups has been shown using Steenkamp and Baumgartner's (1998) procedure<sup>10</sup>. In all cases (product familiarity, country familiarity, and product involvement), the 'measurement intercepts' mode of AMOS 6 provides confirmation that configural invariance, metric and scalar invariance are met across survey countries for each product. Constrained CFA models where item loadings (for testing metric invariance) and intercepts (for testing scalar invariance) were constrained to equality for the 4 survey country groups did not display a significant worsening of fit when compared with the baseline model. Given their reliability and invariance, scales of product familiarity, product involvement, and country familiarity were used on an additive basis. Scores range from 3 to 15. Table 4 presents regression results supporting both H1 (standardized coefficient for product familiarity is .072 with  $t=2.76$ ,  $p<.006$ ) and H2 (standardized coefficient for product involvement is .184 with  $t=7.17$ ,  $p<.000$ ) both influences being significant and in the predicted direction, however with higher levels of magnitude and significance for product involvement. In order to test for the presence of a combined effect of product familiarity and product involvement we performed a regression where an interaction term had been added between both explanatory variables. The interaction effects were tested by introducing both explanatory variables and a multiplicative term after centering the variables (following Aiken and West (1991) on moderated multiple regression) as well as control variables (dummies for nationality and gender). Across all product categories, Nationality is shown to be non significant for intensity of association. On the other hand, women associate significantly less countries when presented with a product stimulus (standardized coefficient for gender is  $-.055$  with  $t=2.71$ ,  $p<.011$ ). The interaction term is highly significant (standardized coefficient  $.096$  with  $t=7.17$ ,  $p<.000$ ) without changing the magnitude and significance of the influence of product familiarity and with an increase in the

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<sup>10</sup> Detailed AMOS 6 outputs are available upon request.

magnitude of product involvement influence (standardized coefficient for product involvement is now .213 with  $t=8.1$ ,  $p<.000$ ).

[Insert Table 4 here]

The test for hypothesis H3 is based on a linear regression where the dependent variable is the number of products associated when a particular country stimulus is used (2088 observations) and the independent variables are country familiarity, gender, and respondent nationality (as control variables). Country familiarity scales in questionnaire version 2 are reliable for all COO countries (Cronbach alphas: China: .91; France: .89; Japan: .86; Mexico: .97; Germany: .93; United States: .90). Cross-cultural invariance across national groups of country familiarity scales was assessed using Steenkamp and Baumgartner's (1998) procedure as for product familiarity. Given that country familiarity scales are both reliable and invariant across countries, they were used on an additive basis. Scores range from 3 to 15. H3 is confirmed: country familiarity appears as a significant predictor of country $\Rightarrow$ product associations (standardized coefficient: .30;  $p<.000$ ). Among the nationality control variables, only Chinese nationality appears as a significant predictor of country $\Rightarrow$ product associations suggesting that Chinese respondents tend to make significantly more product associations when given a country as stimulus than respondents of other national groups (see Table 4).

Hypothesis H4a about context-centered product $\Rightarrow$ country association tendencies (CCATs), i.e. respondents associate products more often with their own country than with other countries is tested based on correlation coefficients between nationality and product-country associations (24, that is 6 products x 4 countries which are both survey and COO countries), producing 96 correlation coefficients. Respondents more frequently associate their own country as a COO with positive and significant coefficients in 22 cases out of 24. Respondents less frequently associate products to other countries: correlation with their own nationality is in most cases significantly negative (35) or non significant (32), and in very few cases significantly positive (5). Findings in Table 5 provide support to H4a.

[Insert Table 5 here]

Hypothesis H4b about context-centered country⇒product association tendencies (CCATs) states that, when presented with a country stimulus, respondents associate more products with their own country than with other countries. It is tested based on a two-tailed t-test for equality of means on the average number of associations made by respondents of a particular survey country with their own country versus the average number of associations made by respondents of the same survey country with other stimulus countries. Chinese respondents significantly associate more products with their own country (3.36) than with other countries (2.48;  $p < .0001$ ). The same holds true for German (2.55 vs. 2.18;  $p < .01$ ), Mexican (2.42 vs. 2.15;  $p < .05$ ) and U.S. respondents (2.58 vs. 2.02;  $p < .0001$ ) providing support to H4b.

H4c states that context-centered association tendencies (CCATs) are stronger in the case of less ethnic (more neutral) products. The six products have been divided into two groups on the basis of GE results in both study 1 and study 2: neutral products (vacuum cleaners and shoes) and ethnic products (cars, cosmetics, sound systems, and wine). A t-test for equality of means has been carried out to compare the mean values of product CCATs for both groups (16 data points for neutral products; 32 data points for ethnic products). Mean CCAT score is .30 for neutral versus .17 for ethnic products, a difference which is significant at  $p < .022$ , providing support for H4c.

H5a is tested on the basis of CCATs calculated for both Study 1 and Study 2 with five individualist countries (Canada (80), France (71), Germany (67), Great-Britain (89), and the United States (91); individualism scores in parentheses, see Hofstede, 2001) compared to CCATs in three collectivist countries (China (20), Mexico (30), and Tunisia (38)<sup>11</sup>), resulting in 30 product CCATs for individualist and 18 product CCATs for collectivist countries (the 6 products concerned are those in Study 2 which were already used as stimuli in Study 1). The choice of including countries in both Study 1 and Study 2 is dictated by the need to use all the data available to represent both individualist and collectivist countries<sup>12</sup>. Context-centered association tendencies are stronger in individualist countries (average CCAT score: .30) than in collectivist countries (average CCAT score: .18), a difference significant at  $p < .026$  (bilateral t test with equality of variance not assumed) which provides support to H5a.

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<sup>11</sup> The individualism score for Tunisia is derived from that of Arabic countries such as Egypt and Saudi Arabia.

<sup>12</sup> In order to check for consistency of data collection between Study 1 and Study 2, we tested for the absence of significant differences for the only country which is common to the two data collection steps (i.e. Germany) between estimates of product ethnicity. Consistency is high with correlation between German association scores in Studies 1 and 2 being .876 when product is the stimulus and .956 when country is the stimulus (both  $p < .0001$ ).

Testing H5b required selecting products which are *outgroup* products for both individualist and collectivist survey countries and which have high levels of global product ethnicity to represent typical targets for stereotyping. The choice is constrained by the need to eliminate both neutral products and countries where ethnic products are considered ingroup. This was impossible on the sole basis of Study 2 products and countries (see table 2.1). The following product-country associations were selected because they are strong candidates for stereotyping: cosmetics-France, cosmetics-USA, cars-Germany, sound systems-Japan. They could be seen as *outgroup* products in two individualist survey countries in Study 1 (Britain and Canada) and the two collectivist survey countries in Study 2 (China and Mexico). Findings provide partial support to H5b stating that stereotyping is stronger in collectivist countries for products that can be seen as typical of the *outgroup*. The mean product⇒country association is .83 for collectivist China and Mexico against .58 for individualist Britain and Canada (a difference significant at  $p < .001$  in a two-tailed t-test for equality of means). However, The mean country⇒product association is .31 for China and Mexico against .21 for Britain and Canada, that is, in the predicted direction, however, insignificant.

To test hypothesis H6, a logistic regression was run with individual associations based on a single stimulus (either product or country) in section 1 of the questionnaire as endogenous variable (3340 product⇒country associations and 3480 country⇒product associations). Exogenous variables are product-country (respectively country⇒product) associations based on manufacturing, design or brand in section 2 of the questionnaire, and nationality dummies as control variables. Since the dependent variable is binary, logistic regression was performed to assess the coefficients and their significance. The regression equation is:

$$A^{pc} (A^{cp}) = f(\text{natCH}, \text{nat-GE}, \text{nat-ME}, \text{nat-US}, \text{gender}, \text{Ass.-Manufacturing}, \text{Ass.-Design}, \text{Ass.-Brand})$$

Findings are reported in Table 6. As expected, nationality is not significant, but Manufacturing, Design, and Brand are highly significant in explaining product⇒country associations (all  $p < .000$ ). Odds Ratios indicate that brand is the most powerful driver of association (i.e. the odds of the dependent being 1 are increased by a factor of 3.25 when brand is cited as an association factor), followed by design (odds increased by a factor of 2.88 when design is cited as an association factor), and manufacturing (odds increased by a factor

of 2.03 when manufacturing is cited as an association factor). The same holds true for country⇒product associations where Manufacturing, Design, and Brand image are highly significant ( $p<.000$ , except for design  $p<.015$ ). Here again, odds ratios indicate that brand is the most powerful driver of association (i.e. the odds of the dependent being 1 are increased by a factor of 3.28 when brand is cited as an association factor), with manufacturing (odds increased by a factor of 3.04 when manufacturing is cited as an association factor) being more important than design (odds increased by a factor of 1.32 when design is cited as an association factor).

[Insert Table 6 here]

When particular product↔country associations are considered, the picture is more complex. For instance, the Japan-car association is significantly related only to brand ( $p<.012$ ) and more likely to made by German ( $p<.1$ ) or Mexican ( $p<.001$ ) respondents. The car-Germany association is more likely to be made by Chinese ( $p<.05$ ), and less likely by Mexican ( $p<.001$ ), or U.S. ( $p<.05$ ) respondents while manufacturing ( $p<.005$ ) and brand ( $p<.1$ ) support the association. Detailed findings are summarized in Table 7.

[Insert Table 7 here]

### **Study 3 (part VI)**

This study is designed to test the influence of congruence between product ethnicity and COO on purchase intentions, that is, whether incongruent assemblages reduce willingness to buy. The willingness to buy scale used is based on the Grewal, Monroe and Krishnan (1998) 3-item scale, itself derived from Dodds, Monroe and Grewal (1991). They report scale reliability between .92 and .95 and variance extracted between .79 and .86 for their two empirical studies (Grewal et al. 1998). The scale was adapted to product-country situations, measuring one's willingness to buy a given product from a given country-of-origin, rather than buying a particular model of a given product, as in the original scale. A five point scale was anchored at “very low” to “very high” to measure the 3 items: “probability of buying this product”, “probability that I would consider buying this product”, and “likelihood that I would purchase this product”, based on a given product from a given country. Data collection took place in a Western European country that was not used as a survey country or as a COO

stimulus in either Study 1 or Study 2. Furthermore, products used as stimuli were chosen because there is no significant local production (little cosmetics, no sound systems, no cars, and little wine are produced in this country) which largely reduces the biases related to CCATs. In the self-administered survey instrument, four contrasts were presented between congruent and incongruent product-country assemblages: cosmetics-France versus cosmetics-Mexico, sound systems-Japan versus sound systems-France, cars-Germany versus cars-China, wine-France versus wine-Japan. A convenience sample was obtained with 272 subjects of which 50.4% male and a mean age of 35 (standard deviation: 15.8 years).

Cronbach alphas for each product-country scale demonstrated high enough reliability to use an additive scale. 4 contrasts between willingness-to-buy ethnically congruent and ethnically non congruent origins were proposed to respondents: cosmetics-France ( $\alpha = .86$ ) versus cosmetics-Mexico ( $\alpha = .74$ ), sound systems-Japan ( $\alpha = .84$ ) versus sound systems-France ( $\alpha = .87$ ), cars-Germany ( $\alpha = .86$ ) versus cars-China ( $\alpha = .88$ ), and wine-France ( $\alpha = .91$ ) versus wine-Japan ( $\alpha = .82$ ). Scales of willingness-to-buy range from 3 to 15, that is, from low to high likelihood of purchase. Levene's test of equality of variance is satisfied for all four contrasts ( $p < .000$ ) and willingness-to-buy is systematically higher for all congruent associations based on a bilateral t-test for equality of means ( $p < .000$ ): cosmetics-France (11.12) versus cosmetics-Mexico (4.13), sound systems-Japan (11.59) versus sound systems-France (6.06), cars-Germany (11.80) versus cars-China (4.41), and wine-France (12.40) versus wine-Japan (3.92). This provides full support to H7.

## **VII – Discussion, implications and limitations**

### ***Theoretical implications***

As noted above, there is a growing body of evidence questioning the relevance of the COO cue for consumers (Samiee, 1994), especially the weak influence of COO cues on purchase intentions (Peterson and Jolibert, 1995; Ulgado and Lee, 1998; Verlegh and Steenkamp, 1999; Samiee et al., 2005). This influence has probably been empirically inflated as shown by Samiee et al., 2005. The approach proposed in this paper is no conceptual revolution in COO studies. It addresses some concerns expressed in the literature by clearly outlining that country image is product-specific and that respondents should not be driven to overestimate the salience of COOs. The data collection method is based on only one stimulus (product **or** country), whereas the literature uses two (product and country) or three stimuli (product,

attribute, and country). respondents are asked to carry out associative rather than evaluative tasks. If they are unfamiliar with or have little knowledge about a product or a country, they simply do not mention it or do not tick a box. They are not obliged to make evaluations if they lack adequate cognitions for the task at hand. The cognitive process is less constrained and less framed. Respondents are less guided in their association process, leading to a more accurate picture of linkages between products and countries.

When the free association task is related to a constrained association task (with the three stimuli given and with a choice to associate or not), brand appears as the most important determinant of country-product associations. Consumer evaluations related to the brand name may differ from those related to the country-of-manufacture (Johansson and Thorelli, 1985; Han and Terpstra, 1988). Eroglu and Machleit (1989) concluded that consumers accord a similar influence to brand and country-of-manufacture respectively. However, recent research shows that country of brand has become more significant for consumers than country-of-manufacture (Leclerc *et al.*, 1994; Samiee *et al.*, 2005). Thus country-of-origin is increasingly considered as that country which consumers typically associate with a product or brand, with a declining concern for the country where it is actually manufactured.

Our findings show that country-of-manufacture is more salient when starting from a country rather than a product stimulus. This is consistent with COO research which shows that global companies may manipulate brand names to suggest particular national origins, especially when linguistic aspects of the brand name convey meanings which are part of brand image marketers look for (Leclerc *et al.*, 1994; Schmitt and Pan, 1994; Pan and Schmitt, 1995; Usunier and Shaner, 2002).

Another significant implication involves the theoretical discussion of the role of familiarity in the use of the COO cue which is debated in the literature (Johansson *et al.*, 1989; Laroche *et al.*, 2003). Respondents associate more countries with particular products when they are more familiar with these products. Our results support the view that increased familiarity with the product category results in more rather than less use of COO cues. More striking is the fact that product involvement also has a positive impact on product-country associations, this being true in both association directions (country $\Rightarrow$ product and product $\Rightarrow$ country). The interaction term being also significant, it can be concluded that consumers high in product familiarity and product involvement are more prone and able to make associations between countries and products. The familiarity construct holds not only for products but also for countries. When people are more familiar with a particular country they associate more products with that country. Associations are not evaluations. However, it is possible that COO

studies have inflated the importance of the COO cue by collecting data from respondents whose product familiarity, country familiarity and product involvement were too low to give meaningful evaluative answers.

Local contexts still matter. The existence of context-centered association tendencies (CCATs) shows that consumers still rely on local knowledge in terms of both products and countries. Local product knowledge is deeply related to culture and traditions on the one hand, and exposure to global products and brands on the other hand. Familiarity with and knowledge of foreign countries is related to geographical proximity, language, political ties between countries, history (e.g. British people associate wine with Australia, a former colony), and to actual trade flows between countries. Table 2 indicates that an overwhelming percentage of associations between products and countries are not shared cross-nationally, resulting in no product ethnicity for most of the possible associations. Such differences reflect local market specificities to a large extent: Mexican experience with the U.S. as a country and with U.S. products is largely incommensurable with that of the Chinese.

### ***Managerial implications***

Product⇒country and country⇒product associations consumers make in a top-of-mind type elicitation task are deemed congruent and constitute a frame of reference within which information processing and choice will most likely take place. As a consequence, manufacturers, designers or brand managers will want to make sure their products fit that reference frame: "Swiss made" for watches is definitely a major driver of consumer behavior. On the other hand, building a new reference frame (e.g. getting consumers to think Brazil when eliciting an association with shoes), may take time and effort. What also appears to be important for a manager is to recognize regional disparities in product ethnicity: if Japanese cosmetics seem a natural association for Chinese consumers, they are relatively foreign to German consumers. As such, Japanese cosmetics will require different market drivers in Germany than in Japan, by way of strategic partnering such as piggybacking or co-branding to help develop ethnic references.

Since willingness to buy is related to the congruence between COO and product ethnicity, companies should always start by assessing the degree of product ethnicity for the product category for which a specific marketing strategy is being developed. Product ethnicity may reflect different associative cues: the perceived national origin of the product (e.g. the city of Köln in Germany for Eau de Cologne), its historical place of production (e.g. India for curry sauce), a well-known place of consumption or use (e.g. tea for Britain), the country associated

with a well known brand (e.g. Japan with Honda or Toyota), or the manufacturer's headquarters. There is much local diversity in the knowledge base underlying product-country associations. For instance, although the national origin of yoghurt is Bulgaria, very few respondents in Study 1 made this association: only 1 Canadian and 15 French respondents. Given the relatively high level of association heterogeneity across survey countries, it is highly recommended empirical data should be collected to assess product $\leftrightarrow$ country associations in each national market rather than to infer associations from seemingly well-established stereotypes that may not be backed by evidence.

In the case of strong global product ethnicity ('ethnic product'), companies should develop full congruence between the origin inferred by consumers and product ethnicity. Branding is the key ingredient for such congruence, especially since the brand name can evoke the origin through linguistic inference. However, it is clear from our findings that manufacturing origin matters also in both association directions (country $\Rightarrow$ product and product $\Rightarrow$ country). If inadequate, manufacturing origin should be downplayed by deleting the 'made-in' tag on the product, as is increasingly encouraged by WTO rules of origin. Origin strategies can be applied consistently worldwide for ethnic products since the association is globally shared. In collectivist cultures, often developing economies, this can be done without hesitation for Western and/or imported products, seen as outgroup products, since origin stereotyping is strong and makes such products ethnically congruent.

In the case of low levels of product ethnicity ('neutral products'), local market characteristics should be considered carefully. In countries with strong CCATs, a neutral product should be at best locally branded or neutrally branded in terms of national origin (e.g. the 'national' brand for vacuum cleaners by Matsushita) in order to build on the preference of local consumers for their national origin. Since individualistic, often industrialized economies tend to value their own origin and display stronger CCATs, the prescription of local or neutral branding is even more relevant for such markets.

Marketers should be advised to downplay country image, when it is perceived as weak and non congruent with product category. Verlegh et al. (2005, p. 136) emphasize that "the source credibility of a country of origin is higher when consumers associate it with a more favorable product-country image." Consumers may respond negatively if they perceive that important product features are not congruent with country image. It is recommended to avoid increasing claim favorability in the case when source credibility is low (e.g. non congruent product-country image) and ad involvement is high (Verlegh et al., 2005). In case of weak country

image and non congruent product ethnicity (what Roth and Romeo 1992 call an “unfavorable mismatch”), marketing communication should emphasize product benefits rather than COO. It is important for managers to clearly distinguish between the two association directions. Advertising messages should take into account that associations are easier to make when product (i.e. product⇒country) rather than country (country⇒product) is first used as a stimulus. A Dutch cheese manufacturer website uses the product⇒country association with the following text that features the two directions for association in the right order “If there’s one true *cheese country* in the world, it has to be Holland. Today the *country* produces more than 600,000 tonnes of *cheese*, over 80% of which is exported.”<sup>13</sup> When association is strong for product⇒country but weak in the reverse direction, marketing communication messages should start from the product and link to it the country.

Competition takes place not only among firms (and brands) but also across industries (when products are substitutes) and among countries-of-origin (when public authorities try to promote country image in the hope of developing exports). Collective advertising campaigns launched by national industry associations often focus on the country-product association displaying much country-related information in their messages because they spontaneously think that such associations are shared cross-nationally. They should, however, check that such associative linkages are also present in countries which they target. They should also ensure that negative country image does not backfire to the detriment of product image. The improvement of country image should be done in line with particular product categories in order to generate product ethnicity. Amin et al (2005) show how Taiwanese public authorities developed country image campaigns over a long period of time (1990-2004), emphasizing technological innovation while highlighting particular products, especially computer hardware and wireless phones.

The relative inefficiency of ‘Buy-National’ campaigns has been shown by several empirical studies (Ettenson and Gaeth, 1988; Fenwick and Wright, 2000). ‘Buy National’ campaigns are understandably not very efficient because they start from a particular country, a complex stimulus, to generate product-related thoughts associated with this country. ‘Buy national’ campaigns should therefore take into account product-country associations. Johansson and Nebenzahl (1987) show that a campaign appealing to people to ‘Buy American’ had to be based on a normative influence (social norm favouring patriotic behaviour) as opposed to a cognitive influence (trying to convince the consumer that the national product is objectively

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<sup>13</sup> <http://www.holland.com/uk/index.html?page=http://www.holland.com/uk/frico/main.html>

superior). Consumers remain fairly rational in their product evaluations. Therefore, an attempt to reinforce the quality perception of locally made products could prove ineffective if it is perceived by people as unsupported by evidence and experience. Nevertheless, such campaigns are likely to result in greater influence (to be less ineffective) where CCATs are stronger and when the product is ethnically neutral. They can also be efficient when product ethnicity is strong, provided that product ethnicity is related to the home country (e.g. a 'Buy US cars' campaign). The best approach to adopt for 'patriotic buying' is to play clearly on nationalistic feelings (emphasize country), and not to attempt to influence consumers in their product evaluation (i.e. de-emphasize product unless product ethnicity is congruent with the national origin).

### ***Limitations***

Product ethnicity scores should be interpreted carefully, particularly regarding their degree of exclusiveness and their degree of stability across countries. For instance, in both Study 1 and Study 2, wine's global product ethnicity is definitively French (.84 and .86), although Germans associate wine also closely with Italy (76%) and Germany (54%). In study 1, bicycles' only significant global product ethnicity is Dutch (.40) although 60% of Germans associate bicycles with Germany. Due to CCATs, a particular country may make very distinct associations from other countries for particular products. Since CCATs were shown to be widespread, the measurement of product ethnicity should be adjusted to take them into account.

In Study 1, the list of products and/or countries subjected to respondents for association was partly based on their anticipated capacity to elicit relatively high degrees of product ethnicity. In Study 2, products and country stimuli were chosen because they had been widely used in COO research, and product stimuli mixed ethnic and neutral products. We acknowledge that findings are somewhat contingent on the stimuli chosen. A much larger set of stimuli could not be considered due to data collection constraints. The limited reference set naturally skewed product ethnicity scores to reflect associations with stimulus countries and products. Had other choices been made, product ethnicity levels may have been weaker, as in the case of vacuum cleaners. Although 8 survey countries, 20 products, and 20 COO countries were used in Study 1 and Study 2, the number of COO countries as well as the number of survey countries could be increased in order to provide a more adequate representation of different geographical and cultural areas. For instance, in Study 1, Brazil was the only stimulus country that could naturally be associated with coffee, the absence of other well-known producing

countries such as Colombia may lead to artificially high country-product associations. The survey approach in Study 1 did not allow for a fully independent treatment of both sets of stimuli. The solution proposed in Study 2 follows a split-sample procedure, where each sub-sample was subject to a set of country or product stimuli.

The difference between product $\Rightarrow$ country and country $\Rightarrow$ product associations is thought to partly reflect the size disparity between the product pool and the country pool used by respondents, leading to diluting the country $\Rightarrow$ product associations. It may also reflect the respondents' greater difficulty to associate products with countries than vice-versa. The reason for this difference should be further investigated. Finally, brands may have an even stronger impact on product-country associations than shown by this research. For instance, the Japanese global product ethnicity of sound systems has to do with the global brand recognition of Japanese brands such as Sony.

### ***Conclusion***

In a globalizing world, products are increasingly stateless. Many products can be manufactured with a world-class technology, branded globally, and sold worldwide. However, consumers still make associations between products and countries, on the basis of objective information, language-based cues such as brand names, as well as commonly held stereotypes. Rather than using multiple stimuli for generating associative thoughts, this research started from one stimulus (either product or country) and avoided forcing respondents into evaluative tasks when they possibly have little basis for such evaluation. Definitions and measurements were proposed for product $\Rightarrow$ country, country $\Rightarrow$ product associations, product ethnicity, and context-centered association tendencies (CCATs). Following an exploratory approach in Study 1 that allowed to operationalize measures, Study 2 was meant to further investigate the relationships of product $\leftrightarrow$ country associations to key constructs that have been shown to matter in the COO literature: product familiarity, product involvement, country familiarity, image related to product attributes, and cultural dimensions (individualism versus collectivism). While product ethnicity partly reflects entrenched stereotypes (e.g. Italy as pasta country), it appears to be a multifaceted phenomenon due to the diversity of local consumption experiences and the complexity of categorization processes. Product ethnicity can be exclusive or shared (i.e. linking a product to one or several countries and vice-versa) and is often influenced by context-centered association tendencies. We encourage other researchers in international marketing and cross-national consumer behavior

to follow the approach proposed in this paper in order to deepen the understanding of associations between products and countries in a globalizing world.

## References

- Aaker, Jennifer, and Durairaj Maheswaran (1997), "The Effect of Cultural Orientation and Cue Diagnosticity on Processing and Product Evaluations," *Journal of Consumer Research*, 24 (December), 315-27.
- Agrawal, Jagdish and Wagner A. Kamakura (1999). Country of origin: A competitive advantage?, *International Journal of Research in Marketing*, 16(4): 255-267.
- Ahmed, Zafar U., James P. Johnson, Xia Yang, Cheng Kheng Fatt et al. (2004), "Does Country of Origin Matter for Low-Involvement Products?", *International Marketing Review*, 21 (1), 102-20.
- Amine, Lyn S., Mike C.H. Chao, and Mark J. Arnold (2005), "Executive Insights: Exploring the Practical Effects of Country of Origin, Animosity, and Price-Quality Issues: Two Case Studies of Taiwan and Acer in China," *Journal of International Marketing*, 13 (2), 114-150.
- Aiken, Leona S. and Stephen G. West (1991). *Multiple Regression: Testing and Interpreting Interactions*. Newbury Park, CA: Sage.
- Alba, Joseph W. and J.Wesley Hutchinson (1987), "Dimensions of Consumer Expertise", *Journal of Consumer Research*, 13 (March), 411-54.
- Andrews, John and Terence Shimp (1990), "Effects of Involvement, Argument Strength, and Source Vividness on Central and Peripheral Processing of Advertising," *Psychology and Marketing*, 7(3), 195-214.
- Bailey, William and Sheila Amin Gutierrez de Pineres (1997), "Country of Origin Attitudes in Mexico: The Malinchismo Effect," *Journal of International Consumer Marketing*, 9 (3). 25-41.
- Balabanis, George and Adamantios Diamantopoulos (2004), "Domestic Country Bias, Country-of-Origin effects, and Consumer Ethnocentrism: A multidimensional Unfolding Approach," *Journal of the Academy of Marketing Science*, 32(1), 80-95.
- Barsalou, Lawrence W. (1985), "Ideals, Central Tendency, and Frequency of Instantiation as Determinants of Graded Structure in Categories", *Journal of Experimental Psychology*, 11 (4), 629-54.
- Batra, Rajeev, Venkatraman Ramaswamy, Dana L. Alden, Jan-Benedikt E.M. Steenkamp, and S. Ramachander (2000), "Effets of Brand Local and NonLocal Origin on Consumer Attitudes in Developing Countries," *Journal of Consumer Psychology*, 9(2), 83-96.
- Bettman, James R. (1979), *An Information Processing Theory of Consumer Choice*. Reading, Massachusetts: Addison-Wesley.

- Bilkey, Warren J. and Erik Nes (1982), "Country-of-Origin Effects on Product Evaluations", *Journal of International Business Studies*, Spring–Summer, 89–99.
- Bloch, Peter H. (1981), "An Exploration into the Scaling of Consumers' Involvement with a Product Class", in *Advances in Consumer Research*, K.B. Monroe ed., Vol.8, Association for Consumer Research, Ann Arbor, 61-5.
- Brisoux, Jacques E. and Laroche, Michel (1980), "A Proposed Consumer Strategy of Simplification for Categorizing Brands," in *Evolving Marketing Thought for 1980* eds John D. Summey and R.D. Taylor, Southern Marketing Association, 112-14.
- Campbell, Donald T. and O. Werner (1970), 'Translating, Working through Interpreters and the Problem of Decentering', in R. Naroll and R. Cohen (eds.), *A Handbook of Method in Cultural Anthropology*, The Natural History Press: New York, 398–420.
- Cattin, Philippe, Alain Jolibert and Colleen Lohnes (1982), "A Cross-Cultural Study of "Made in" Concepts", *Journal of International Business Studies*, Winter, 131-141
- Cohen, Joel B. and Kunal Basu (1987), "Alternative Models of Categorisation: Toward a Contingent Processing Framework", *Journal of Consumer Research*, 13 (4), 455-72.
- Collins, Allan M. and M. Ross Quillian (1969), "Retrieval Time from Semantic Memory", *Journal of Verbal Learning and Verbal Memory*, 8, 240-47.
- Dawar, Niraj and Paul F. Anderson (1994), "The Effects of Order and Direction on Multiple Brand Extensions", *Journal of Business Research*, 30, 119-29.
- Dodds, William B., Kent B. Monroe, and Dhruv Grewal (1991), "The Effects of Price, Brand, and Store Information on Buyers' Product Evaluations," *Journal of Marketing Research*, 28(August), 307-19.
- Douglas, Mary and Baron Isherwood (1979), *The World of Goods: Towards and Anthropology of Consumption*, Basic Book, New York.
- Erickson, Gary M., Johny K. Johansson and Paul Chao (1984), "Images Variables in Multi-attribute Product Evaluations: Country of origin effects", *Journal of Consumer Research*, 11 (September), 694–99.
- Eroglu, Selvin A. and Karen A. Machleit (1989), "Effect of Individual and Product-specific Variables on Utilising Country of Origin as a Product Quality Cue", *International Marketing Review*, 6 (6), 27-41.
- Ettenson, R., Wagner, J. and Gaeth, G. (1988). Evaluating the Effect of Country-of-Origin and the "Made in the USA" Campaign: A Conjoint Approach, *Journal of Retailing*, 64(1), 85–100.
- Fenwick, G.D and Wright, C.I. (2000). Effect of a Buy-National Campaign on Member Firm Performance, *Journal of Business Research*, 47(2), 135-45.

- Fishbein, Martin (1963), "An Investigation of the Relationships between Beliefs about an Object and the Attitude toward that Object", *Human Relations*, 16 (August), 233-40.
- Ger, Güliz, Russell W. Belk and Dana N. Lascu (1993), "The Development of Consumer Desire in Marketing and Developing economies: The cases of Romania and Turkey", in McAlister, L. and M.L. Rothschild (Eds), *Advances in Consumer Research*, Association for Consumer Research, Vol. 20, 102-7.
- Ger, Güliz, Søren Askegaard, and Ania Christensen (1999), "Experiential Nature of Product-Place Images: Image as a Narrative," *Advances in Consumer Research*, 26 (1), 165-70.
- Grewal, Dhruv, Kent B. Monroe, and R. Krishnan (1998), "The Effects of Price-Comparison Advertising on Buyers' Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions," *Journal of Marketing*, 62(April), 46-59.
- Gürhan-Canli, Zeynep and Durairaj Maheswaram (2000), "Cultural Variations in Country of Origin effects," *Journal of Marketing Research*, vol. 37, 309-17.
- Hamzaoui, Leila and Dwight Merunka (2006), "The Impact of Country of Design and Country of Manufacture on Consumer Perceptions of Bi-National Products' Quality: An Empirical Model Based on the Concept of Fit", *Journal of Consumer Marketing*, 23 (3), 145-55.
- Han, C.Min and Terpstra, Vern (1988). Country of Origin Effects for Uni-national and Bi-national Products, *Journal of International Business Studies*, 19(2): 235–55.
- Han, C. Min (1988), "The Role of Consumer Patriotism in the Choice of Domestic Versus Foreign Products", *Journal of Advertising Research*, 28 (June), 25-32.
- Han, C. Min (1990), "Country Image : Halo or Summary Construct ?", *Journal of Marketing Research*, 26 (May), 222-229.
- Hofstede, Geert (2001), *Culture's Consequences*, 2<sup>nd</sup> edn, Sage, Thousand Oaks, CA.
- Hong, S. and R.S. Jr. Wyer (1989), "Effects of Country of Origin and Product Attribute Information on Product Evaluation: An Information Processing Perspective", *Journal of Consumer Research*, 16 (2), 175-85.
- Jaffé, E.D and Nebenzahl, I.D. (2001). *National Image and Competitive Advantage: The Theory and Practice of Country-of-Origin Effects*. Copenhagen: Copenhagen Business School Press.
- Johansson, Johny K., Susan P. Douglas and Ikujiro Nonaka (1985), "Assessing the Impact of Country of Origin on Product Evaluations: A New Methodological Perspective", *Journal of Marketing Research*, 22 (November), 388–96.
- Johansson, Johny K. and Israel D. Nebenzahl (1986), 'Multinational Production: Effect on Brand Value', *Journal of International Business Studies*, 17(3), 101–26.

- Johansson, Johny K. and Israel D. Nebenzahl (1987), 'Country-of-Origin, Social Norms and Behavioral Intentions', in S. Tamer Cavusgil (ed.), *Advances in International Marketing*, vol. 2, JAI Press: Greenwich, CT, 65–79.
- Johansson, Johny K. (1989), "Determinants and Effects of the Use of 'Made in' Labels", *International Marketing Review*, 6 (1), 47-58.
- Kent, Robert J. and Chris T. Allen (1994), "Competitive Inference Effects in Consumer Memory for Advertising: The Role of Brand Familiarity," *Journal of Marketing*, 58(3), 97-106.
- Klein, Jill Gabrielle, Richard Ettenson, and Marlene D. Morris (1998), 'The Animosity Model of Foreign Product Purchase: An Empirical Test in the People's Republic of China,' *Journal of Marketing*, 62(January), 89-100.
- Komatsu, Lloyd K. (1992), "Recent Views of Conceptual Structures", *Psychological Bulletin*, 112 (3), 500-26.
- Leclerc, France, Bernd H. Schmitt and Laurette Dubé (1994), "Foreign Branding and its Effects on Product Perceptions and Attitudes", *Journal of Marketing Research*, 31 (2), 263–70.
- Lee, James A. (1966), 'Cultural Analysis in Overseas Operations', *Harvard Business Review*, March–April, 106–11.
- Levine, Robert A. and Donald T. Campbell (1972), *Ethnocentrism. Theories of Conflict, Ethnic Attitudes, and Group Behavior*. New York: John Wiley and Sons, Inc.
- Lewis-Beck, Michael S. (1993), *International Handbook of Quantitative Applications in the Social Sciences*, vol. 1, London: Sage.
- Li, W.K. and Kent B. Monroe (1992), "The role of Country of Origin Information on Buyer's Product Evaluation: An in-depth interview approach", *AMA Educator's Proceedings: Enhancing Knowledge Development in Marketing*, 274-80.
- Loken, Barbara and James Ward (1990), "Alternative Approaches to Understanding the Determinants of Typicality", *Journal of Consumer Research*, 17 (2), 111-26.
- Lumpkin, James R, John C. Crawford and Gap Kim (1985), 'Perceived Risk as a Factor in Buying Foreign Clothes', *International Journal of Advertising*, 4, 157–71.
- Maheswaran, Durairaj (1994), 'Country of Origin as a Stereotype: Effects of Consumer Expertise and Attribute Strength on Product Evaluations', *Journal of Consumer Research*, vol. 21 (September), 354–65.
- Markus, Hazel Rose and Shinobu Kitayama (1991), 'Culture and the Self: Implications for Cognition, Emotion and Motivation', *Psychological Review*, 98 (2), 224–253.
- Martin, Ingrid M. and Sevgin Eroglu (1993), 'Measuring a Multi-Dimensional Construct: Country Image', *Journal of Business Research*, vol. 28, 191–210.

- McClelland, James L. and David E. Rumelhart (1986), *Parallel Distributed Processing*, Vol. 1 & 2. Cambridge MA : Bradford Book, MIT Press.
- Mervis, Carolyn B. and Eleanor Rosch (1981), "Categorization of Natural Objects", *Annual Review of Psychology*, 32, 89-115.
- Mitchell, Andrew (1979), "Involvement: A Potentially Important Mediator of Consumer Behavior", *Proceedings of the Association for Consumer Research*, 6, 191-96.
- Morello, Gabrielle (1984), "The Made-in Issue: A Comparative Research on the Image of Domestic and Foreign Products", *European Research*, 5 (21), 68–74.
- Morganosky, Michelle A. and Michelle M. Lazarde (1987), 'Foreign Made Apparel: Influences on Consumers' Perceptions of Brand and Store Quality', *International Journal of Advertising*, vol. 6, 339–46.
- Murphy, Gregory L. and Doug L. Medin (1985), "The Role of Theories in Conceptual Coherence", *Psychological Review*, 92 (July), 289-316.
- Nebenzahl, Israel D. and Eugene D. Jaffé (1989), 'A Methodological Approach to the Estimation of Demand Functions from Country-of-Origin Effects', in Reijo Luostarinen (ed.), *Dynamics of International Business*, vol. 1, proceedings of the 15th Annual Conference of the European International Business Association, Helsinki, Finland, 386–414.
- Nebenzahl, Israel D., Eugene D. Jaffé and Jean-Claude Usunier (2003), "Personifying Country-of-Origin Research", *Management International Review*, 43 (4), 383-406.
- Nebenzahl, Israel D., Eugene D. Jaffé and Shlomo I. Lampert (1997), "Towards a Theory of Country Image Effect on Product Evaluation", *Management International Review*, 37 (1), 27–49.
- Netemeyer, Richard, Srinivas Durvasula, and Donald Lichtenstein (1991), "A Cross-National Assessment of the Reliability and Validity of the CETSCALE," *Journal of Marketing Research*, 28(August), 320-27.
- Nishina, Sadafumi (1990), "Japanese Consumers: Introducing Foreign Products/Brands into the Japanese Market," *Journal of Advertising Research*, 30(2), 35–45.
- Özsomer, Aysegul and S. Tamer Cavusgil, (1991), "Country-of-Origin Effects on Product Evaluations: A Sequel to Bilkey and Nes Review," AMA Summer Educator's proceedings.
- Pan, Ygang and Berndt Schmitt (1995). "What's in a Name? An Empirical Comparison of Chinese and Western Brand Names." *Asian Journal of Marketing* 4(1): 7-16.
- Papadopoulos, Nicholas and Louise A. Heslop (1986), 'Travel as a Correlate of Product and Country Images,' ASAC Conference, Whistler, British Columbia.

- Papadopoulos, Nicholas and Louise A. Heslop, editors (1993), *Product and Country Images: Research and Strategy*. New York: The Haworth Press.
- Peterson, Robert A. and Alain Jolibert (1995), "A Meta-Analysis of Country-of-Origin Effects", *Journal of International Business Studies*, 26 (4), 883–900.
- Phau, Ian and Vasinee Suntornnond (2006), "Dimensions of Consumer Knowledge and its Impacts on Country of Origin Effects among Australian Consumers: A Case of Fast-Consuming Product", *Journal of Consumer Marketing*, 23 (1), 34-43.
- Ratchford, Brian T. (1987), "New Insights About the FCB Grid," *Journal of Advertising Research*, 27(August-September), 24-38.
- Ratcliffe, Robert and Jonathan Griffin (1999), *Through Other Eyes How the World Sees the United Kingdom*, London: The British Council.
- Reed, Steeve K. (1972), "Pattern Recognition and Categorization", *Cognitive Psychology*, 3, 207-38.
- Reiersen, Curtis (1966), "Are Foreign Products Seen as National Stereotypes?", *Journal of Retailing*, Fall, 33–40.
- Rosch, Eleanor (1973), "Cognitive Reference Points", *Cognitive Psychology*, 7, 532-47.
- Rosch, Eleanor and Carolyn B. Mervis (1975), "Family Resemblances: Studies in the Internal Structure of Categories", *Cognitive Psychology*, 7 (October), 573-605.
- Roth, Martin S. and Jean B. Romeo (1992), Matching Product Category and Country Image Perceptions: A Framework for Managing Country-of-Origin Effects, *Journal of International Business Studies*, 23 (3), 447-97.
- Rothschild, Michael L. (1979), "Advertising Strategies for High and Low Involvement Situations", in *Attitude Research Plays for High Stakes*, John C. Maloney and Bernard Silverman, eds., American Marketing Association, Chicago, 74-93.
- Samiee, Saeed (1994), "Customer Evaluation of Products in a Global Market", *Journal of International Business Studies*, 25 (3), 579–604.
- Samiee, Saeed., Shimp, Terence A., and Sharma, Subbash (2005), "Brand Origin Recognition Accuracy: Its Antecedents and Consumers' Cognitive Limitations," *Journal of International Business Studies*, 36, 379-97.
- Schaefer, Anja (1997), "Consumer Knowledge and Country of Origin Effects", *European Journal of Marketing*, 31 (1), 56-72.
- Schmitt, Berndt and Ygang Pan (1994). "Managing Corporate and Brand Identities in the Asia-Pacific Region," *California Management Review* 36(4), 32-47.
- Shimp, Terence A. and Subash Sharma (1987), 'Consumer Ethnocentrism: Construction and Validation of the CETSCALE', *Journal of Marketing Research*, 24, August, 280-289.

- Shimp, Terence A., Saeed Samiee and Thomas J. Madden (1993), 'Countries and Their Products: A Cognitive Structure Perspective', *Journal of the Academy of Marketing Science*, 21(4), 321–30.
- Srinivasan, Narasimhan, Subbash C. Jain and Kiranjit Sikand (2004), “An Experimental Study of two Dimensions of Country-of-Origin (Manufacturing Country and Branding Country) using Intrinsic and Extrinsic Cues”, *International Business Review*, 13(1), 65-82.
- Steenkamp, Jan Benedikt E. M., and Hans Baumgartner (1998), “Assessing Measurement Invariance in Cross-National Consumer Research,” *Journal of Consumer Research*, 25(1), 78-90.
- Sujan, Mita (1985), "Consumer Knowledge: Effects on Evaluation Strategies Mediating Consumer Judgments", *Journal of Consumer Research*, 12 (1), 31-46.
- Sumner, G.A. (1906), *Folkways*. New York: Ginn Custom Publishing.
- Swinder, Janda and C.P. Rao (1997), “The Effect of Country-of-Origin Related Stereotypes and Personal Beliefs on Product Evaluation,” *Psychology and Marketing*, 14(7), 689–702.
- Tversky, Amos and Daniel Kahneman (1974), "Judgment under Uncertainty : Heuristics and Biases", *Science, New Series*, 185 (4157), 1124-1131.
- Ulgado, Francis M. and Moonkyu Lee (1998), “The Korean versus American Marketplace: Consumer Reactions to Foreign Products,” *Psychology and Marketing*, 15(6): 595-614.
- Usunier, Jean-Claude and Janet Shaner (2002), "Using Linguistics for Creating Better International Brand Names", *Journal of Marketing Communications*, 8, 1-18.
- Usunier, Jean-Claude (2006), “Relevance Versus Convenience in Business Research: The Case of Country-of-Origin Research in Marketing,” *European Management Review*, 4(2), 60-73.
- Van de Vijver, Fons, and Kwok Leung (1997), *Methods and Data Analysis for Cross-cultural Research*. Thousand Oaks, CA: Sage Publications.
- Vaughn, Richard (1986), “How Advertising Works: A Planning Model Revisited,” *Journal of Advertising Research*, 26(1), 57-66.
- Verlegh, P.W.J and Steenkamp. J.-B.E.M. (1999). A Review and Meta-Analysis of Country of Origin Research, *Journal of Economic Psychology*, 20(5), 521-46.
- Verlegh, Peeter W. J., Jan-Benedikt E.M. Steenkamp, and Matthew.T.G. Meulenberg (2005). Country-of-origin Effects in Consumer Processing of Advertising Claims,” *International Journal of Research in Marketing*, 22 (2), 127-39.
- Yang, Chung-Fang (1989), 'Une Conception du Comportement du Consommateur Chinois', *Recherche et Applications en Marketing*, 4(1), 17–36.

Yaprak, Attila (1978), "Formulating a Multinational Strategy: A Deductive Cross-National Consumer Behavior Model", PhD dissertation, Georgia State University, College of Business Administration.

Yavas, Ugur et Guvenc Alpay (1986), "Does an Exporting Nation Enjoy the Same Cross-National Image?", *International Journal of Advertising*, 5, 109–19.

Zaichkowsky, Judith L. (1986), "Conceptualizing Involvement", *Journal of Advertising*, 15, 4-14.

## Appendix 1: Standard dispersion indices

### 1. Diversity index

$$D = 1 - \sum_{k=1}^n p_k^2$$

where:

$n$  = number of modalities

$p_k$  = frequency of modality  $k$

The index tends to 1 when dispersion is infinite.

### 2. Qualitative variation index

$$QVI = D (K / (K - 1))$$

where:

$D$  = diversity index

$K$  = number of modalities

The index tends to 1 when dispersion is infinite.

### 3. Variation ratio

$$VR = 1 - (f_{mode} / N)$$

where:

$f_{mode}$  = number of observations in the modal category

$N$  = total number of observations

The index tends to 1 when dispersion is infinite.

### 4. Entropy index

$$H(X) = \left[ \sum_{k=1}^n (p_k \log_{10}(p_k)) \right] / \log_{10}(n)$$

where:

$n$  = number of modalities

$p_k$  = frequency of modality  $k$

The index, which could be greater than 1, is standardized by dividing the numerator by the log of number of modalities. The standardized index tends to 1 when dispersion is infinite.

The resulting index calculations for wine and bicycles appear in Tables A1 and A2 below.

**Table A1 – Dispersion indices for WINE product-country associations**

<u>Index</u>	<u>5 countries</u>	<u>France</u>	<u>Germany</u>	<u>Great Britain</u>	<u>Canada</u>	<u>Tunisia</u>
Diversity	0.80	0.68	0.77	0.84	0.81	0.67
Qualitative variation	0.83	0.76	0.84	0.91	0.85	0.75
Entropy	0.63	0.65	0.69	0.83	0.61	0.67
Variation Ratio	0.64	0.51	0.66	0.71	0.68	0.48

**Table A2 – Dispersion indices for BICYCLES product-country associations**

<u>Index</u>	<u>5 countries</u>	<u>France</u>	<u>Germany</u>	<u>Great Britain</u>	<u>Canada</u>	<u>Tunisia</u>
Diversity	0.89	0.83	0.73	0.74	0.85	0.77
Qualitative variation	0.93	0.89	0.82	0.81	0.91	0.84
Entropy	0.78	0.77	0.75	0.75	0.77	0.64
Variation Ratio	0.81	0.75	0.55	0.53	0.78	0.60

## Appendix 2: Operationalization of Context-Centered Association Tendencies (CCAT)

CCATs can only be computed based on product-country associations. Country-product associations are inappropriate for measuring CCATs since a dominant product-country association should be computed first. CCATs are always relative to a particular survey country.

### Product CCAT

The computation of product CCATs is a first step in assessing the product association(s) by which context-centered association tendencies are driven.

$$CCAT_{i,m} = \frac{\sum_{k=1}^K (A_{i,j=m,m}^{pc} - A_{i,j=m,k}^{pc})}{K}$$

$CCAT_{i,m}$  context-centered association tendency for product  $i$  and survey country  $m$

The formula is based on the sum of the differences between an association score for product  $i$  with country-of-origin  $m$  made by survey country  $m$  and the association scores of other survey countries for product  $i$  with country-of-origin  $m$ , divided by the number of survey countries  $K$ .

### Total CCAT

To compute CCAT, the survey countries  $k$  ( $k = 1, \dots, K=8$ ) and the product stimuli  $i$  ( $i = 1, \dots, I = 6$ ) common to study 1 and study 2 are taken into account. The formula below compares associations made by respondents of a particular survey country  $m$  associating their own country  $m$  with associations by respondents of survey country  $k$  with country-of-origin  $m$ .

$$CCAT_m = \frac{\sum_{i=1}^I \sum_{k=1}^K (A_{i,j=m,m}^{pc} - A_{i,j=m,k}^{pc})}{I \cdot K}$$

Where :

$CCAT_m$  context-centered association tendency for survey country  $m$  (all products)

$A_{i,j=m,m}^{pc}$  product-country association score in survey country  $m$  for product  $i$  with country-of-origin  $m$

$A_{i,j=m,k}^{pc}$  product-country association score in survey country  $k$  for product  $i$  with country-of-origin  $m$

**Table 1 - List of products and countries given as stimuli to elicit country-product associations  
(Study 1)**

***Products***

Wine	Cosmetics	Vacuum cleaners	Shoes
Beer	Chocolate	Airplanes	Cheese
Vodka	Jeans	Tea	Spring water
Cars	Watches	Pasta	Bicycles
Pine furniture	Sound systems	Yoghurt	Coffee

***Countries***

Germany	France	Spain	Switzerland
Belgium	Great Britain	Netherlands	Tunisia
Brazil	India	Poland	USA
China	Italy	Russia	
Korea	Japan	Sweden	

Table 2 –Product Ethnicity Scores (Study 1)

	<b>Wine</b>	<b>Beer</b>	<b>Vodka</b>	<b>Cars</b>	<b>Pine wood furniture</b>	<b>Cosmetics</b>	<b>Chocolate</b>	<b>Jeans</b>	<b>Watches</b>	<b>Sound Systems</b>	<b>Vacuum cleaners</b>	<b>Airplanes</b>	<b>Tea</b>	<b>Pasta</b>	<b>Yoghurt</b>	<b>Shoes</b>	<b>Cheese</b>	<b>Spring water</b>	<b>Bicycles</b>	<b>Coffee</b>	
<b>Germany</b>		<b>.75</b> .74 / .77		<b>.75</b> .67 / .83	.01						.28				.14			.11	.13		
<b>Belgium</b>		<b>.27</b> .18 / .40					<b>.62</b> .52 / .74														
<b>Brazil</b>																					<b>.71</b> .68 / .75
<b>China</b>													<b>.53</b> .53 / .53							<b>.12</b> .14 / .10	
<b>Korea</b>				.31																	
<b>France</b>	<b>.84</b> .87 / .82			.14	.05	<b>.63</b> .72 / .56					.07	.25			.31	.15	<b>.59</b> .65 / .54	<b>.37</b> .55 / .25	.23		
<b>Great-Britain</b>		.22			.03						.09	.16	<b>.30</b> .29 / .32							.07	
<b>India</b>													<b>.47</b> .41 / .55								
<b>Italy</b>	<b>.33</b> .47 / .23													<b>.78</b> .87 / .70		<b>.65</b> .70 / .60					
<b>Japan</b>				<b>.48</b> .47 / .48						<b>.64</b> .74 / .56											
<b>Spain</b>	.18																				
<b>Netherlands</b>															.38		<b>.36</b> .24 / .55		<b>.29</b> .11 / .72		
<b>Poland</b>			.08												.10						
<b>Russia</b>			<b>.81</b> .88 / .74																		
<b>Sweden</b>				.07	<b>.39</b> .32 / .47										.10						
<b>Switzerland</b>							<b>.60</b> .68 / .53		<b>.77</b> .85 / .70						.29 .12 / .68		<b>.23</b> .21 / .24				
<b>Tunisia</b>																					
<b>USA</b>				<b>.46</b> .42 / .50	.07	.29		<b>.57</b> .83 / .39			0.22	<b>.46</b> .59 / .36			.08					.11	

Global product ethnicity is in bold in each cell; product⇒country ethnicity and country⇒ product ethnicity scores are indicated below in each cell.

**Table 3: Product Ethnicity and Global Product Ethnicity scores (Study 2)**  
 (CA=Car; CO=Cosmetics; SS=Sound Systems; SH=Shoes; VC=Vacuum Cleaners; WI=Wine)

**Product Ethnicity (Product ⇒ country)**

	CA	CO	SS	SH	VC	WI
China	.00	.00	<b>.29</b>	<b>.56</b>	<b>.25</b>	.00
France	.00	<b>.73</b>	.00	<b>.20</b>	.00	<b>.86</b>
Japan	<b>.78</b>	<b>.13</b>	<b>.80</b>	.00	<b>.30</b>	.00
Mexico	.00	.00	.00	.00	.00	.00
Germany	<b>.86</b>	.00	<b>.18</b>	.00	<b>.23</b>	.00
USA	<b>.76</b>	<b>.67</b>	<b>.58</b>	<b>.53</b>	<b>.58</b>	<b>.20</b>

**Product Ethnicity (Country ⇒ product)**

	CAR	CO	SS	SH	VC	WI
China	<b>.36</b>	.00	<b>.34</b>	<b>.47</b>	<b>.27</b>	.00
France	.00	<b>.51</b>	.00	<b>.32</b>	.00	<b>.61</b>
Japan	<b>.43</b>	.00	<b>.84</b>	.00	.00	.00
Mexico	<b>.28</b>	<b>.41</b>	.00	.00	.00	<b>.09</b>
Germany	<b>.64</b>	<b>.42</b>	<b>.17</b>	<b>.59</b>	.00	.00
USA	<b>.23</b>	<b>.66</b>	<b>.29</b>	<b>.51</b>	.00	<b>.18</b>

**Global product ethnicity**

	CAR	CO	SS	SH	VC	WI
China	.00	.00	<b>.32</b>	<b>.51</b>	<b>.26</b>	.00
France	.00	<b>.61</b>	.00	<b>.25</b>	.00	<b>.73</b>
Japan	<b>.57</b>	.00	<b>.82</b>	.00	.00	.00
Mexico	.00	.00	.00	.00	.00	.00
Germany	<b>.74</b>	.00	<b>.17</b>	.00	.00	.00
USA	<b>.42</b>	<b>.66</b>	<b>.41</b>	<b>.52</b>	.00	<b>.19</b>

**Synthesis of product ethnicity measures  
 (GPE, PC and CP product ethnicity)**

	Cars	Cosmetics	Sound systems	Shoes	Vacuum cleaners	Wine
China	.36		<b>.32</b> .29 / .34	<b>.42</b> .38 / .47	<b>.26</b> .25 / .27	
France		<b>.61</b> .73 / .51		<b>.27</b> .23 / .32		<b>.73</b> .86 / .61
Japan	<b>.57</b> .78 / .43	.13	<b>.82</b> .80 / .84		.30	
Mexico	.28	.41				.09
Germany	<b>.74</b> .86 / .64	.42	<b>.17</b> .18 / .17	.59	.23	
USA	<b>.42</b> .76 / .23	<b>.66</b> .67 / .66	<b>.41</b> .58 / .29	<b>.48</b> .46 / .51	.58	<b>.19</b> .20 / .18

\*Cells are empty when product ethnicity in both directions is 0.

**Table 4: Test of H1, H2, and H3**

**Test of H1 and H2: Linear regression of product⇒country associations on nationality, gender, product familiarity (PF), and product involvement (PI), without interaction term.**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.091	.416		2.622	.009
Nat CH	.409	.408	.165	1.002	.316
Nat GE	.033	.414	.013	.080	.936
Nat ME	.051	.413	.022	.124	.901
Nat US	.130	.408	.059	.318	.750
Gender	-.131	.046	-.062	-2.859	.004
FAM	.022	.008	.075	2.853	.004
INV	.059	.008	.188	7.323	.000

R: .270, R Square: .073, Adjusted R Square: .070

**Test of H1 and H2: Linear regression of product⇒country associations on nationality, gender, product familiarity (PF), and product involvement (PI), with an interaction term between PF and PI.**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.980	.415		2.360	.018
Nat CH	.419	.407	.169	1.030	.303
Nat GE	.043	.412	.016	.105	.916
Nat ME	.047	.411	.020	.115	.909
Nat US	.116	.407	.053	.286	.775
Gender	-.116	.046	-.055	-2.548	.011
PF-centered	.021	.008	.071	2.712	.007
PI-centered	.067	.008	.213	8.109	.000
PF-c*PI-c	.009	.002	.096	4.276	.000

R: .285, R Square: .081, Adjusted R Square: .078

**Test of H3: influence of country familiarity on country⇒product associations**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.331	.084		15.876	.000
Nat CH	.589	.073	.190	8.064	.000
Nat GE	.071	.073	.023	.971	.332
Nat ME	-.107	.070	-.037	-1.536	.125
Gender	-.115	.053	-.045	-2.156	.031
Country Fam	.100	.007	.298	13.982	.000

R: .332; R Square: .110; Adjusted R Square: .108

**Table 5: Confirmation of Context-centered association tendencies  
in the 4 national groups  
As concerns product⇒country associations (Hypothesis H4a)**

<b>Association</b>	NAT_CH	NAT_GE	NAT_ME	NAT_US
Car-China	<b>.28</b>	<b>-.13</b>	<b>-.16</b>	.03
Cosmetics-China	<b>.16</b>	-.10	-.09	.05
Sound Systems-China	<b>-.11</b>	<b>-.13</b>	.04	<b>.17</b>
Shoes-China	<b>.51</b>	<b>-.30</b>	<b>-.35</b>	<b>.13</b>
Vacuum Cleaners-China	<b>.20</b>	<b>-.20</b>	.01	-.02
Wine-China	<b>.46</b>	<b>-.12</b>	<b>-.16</b>	<b>-.15</b>
Car -Mexico	-.09	-.03	<b>.15</b>	-.04
Cosmetics-Mexico	<b>-.12</b>	-.07	<b>.15</b>	.02
Sound Systems-Mexico	-.07	-.06	<b>.04</b>	.07
Shoes-Mexico	<b>-.20</b>	<b>-.20</b>	<b>.63</b>	<b>-.25</b>
Vacuum Cleaners-Mexico	-.10	-.09	<b>.27</b>	-.09
Wine-Mexico	-.10	<b>-.11</b>	<b>.36</b>	<b>-.15</b>
Car-Germany	-.01	<b>.14</b>	-.00	<b>-.11</b>
Cosmetics-Germany	-.09	<b>.48</b>	<b>-.18</b>	<b>-.16</b>
Sound Systems-Germany	<b>.13</b>	<b>.19</b>	-.09	<b>-.17</b>
Shoes-Germany	.08	<b>.32</b>	<b>-.23</b>	<b>-.13</b>
Vacuum Cleaners-Germany	-.07	<b>.55</b>	<b>-.21</b>	<b>-.19</b>
Wine-Germany	-.01	<b>.45</b>	<b>-.26</b>	<b>-.13</b>
Car-USA	.09	<b>-.30</b>	-.03	<b>.20</b>
Cosmetics-USA	.02	<b>-.15</b>	-.05	<b>.15</b>
Sound Systems-USA	-.07	<b>-.14</b>	<b>.14</b>	.04
Shoes-USA	.10	<b>-.22</b>	<b>-.11</b>	<b>.19</b>
Vacuum Cleaners-USA	<b>-.16</b>	<b>-.27</b>	<b>.22</b>	<b>.16</b>
Wine-USA	<b>-.25</b>	<b>-.12</b>	<b>-.31</b>	<b>.61</b>

Figures in bold are significant at  $p < .05$

**Table 6: Test of Hypothesis H6**

**Logistic regression of product⇒country associations on associations as a country of manufacture, a country of design, a country of brand, gender, and nationality variables**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step	NatCH	1.135	.843	1.813	1	.178	3.112
1(a)	NatGE	.098	.854	.013	1	.909	1.103
	NatME	.528	.853	.384	1	.536	1.696
	NatUS	.417	.845	.243	1	.622	1.517
	Gender	.023	.090	.063	1	.802	1.023
	Man	.707	.092	59.363	1	.000	2.027
	Des	1.058	.111	90.417	1	.000	2.880
	Brand	1.178	.109	117.381	1	.000	3.249
	Constant	-1.135	.852	1.774	1	.183	.321

-2 Log likelihood: 3205.917. Cox & Snell R Square: .234. Nagelkerke R Square: .331

**Logistic regression of Country⇒Product associations on associations as a country of manufacture. a country of design. a country of brand. gender. and nationality variables**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step	NatCH	.373	.113	10.981	1	.001	1.452
1(a)	NatGE	-.082	.115	.514	1	.473	.921
	NatME	-.347	.108	10.383	1	.001	.707
	Gender	-.106	.083	1.652	1	.199	.899
	Man	1.114	.105	111.993	1	.000	3.047
	Des	.289	.115	6.291	1	.012	1.335
	Brand	1.183	.121	95.215	1	.000	3.265
	Constant	-2.420	.122	392.195	1	.000	.089

-2 Log likelihood: 3642.243. Cox & Snell R Square: .174. Nagelkerke R Square: .245

**Logistic regression of associations between countries and products in both directions on associations as a country of manufacture. a country of design. a country of brand. gender. and nationality variables**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step	NatCH	1.952	.823	5.622	1	.018	7.042
1(a)	NatGE	1.300	.827	2.469	1	.116	3.668
	NatME	1.403	.827	2.881	1	.090	4.067
	NatUS	1.477	.824	3.218	1	.073	4.381
	Gender	-.015	.055	.077	1	.782	.985
	Man	.640	.060	113.888	1	.000	1.896
	Des	.615	.071	75.422	1	.000	1.849
	Brand	.967	.071	184.443	1	.000	2.631
	Constant	-2.796	.827	11.433	1	.001	.061

-2 Log likelihood: 8149.463. Cox & Snell R Square: .174. Nagelkerke R Square: .232

**Table 7: Logistic regression on the respondent level for ethnic products**

**Dependent variable: product⇒country / product⇒country associations**

**Independent variables: associations as a country of manufacture, a country of design, a country of brand, and nationality variables**

$$A^{pc} = f(\text{nat-CH}, \text{nat-GE}, \text{nat-ME}, \text{nat-US}, \text{A-Manufacturing}, \text{A-Design}, \text{A-Brand})$$

$$A^{cp} = f(\text{nat-CH}, \text{nat-GE}, \text{nat-ME}, \text{nat-US}, \text{A-Manufacturing}, \text{A-Design}, \text{A-Brand})$$

	JA-CA	CA-JA	GE-CA	CA-GE	US-CA	CA-US	FR-CO	CO-FR	US-CO	CO-US	JA-SS	SS-JA	CH-SH	SH-CH	US-SH	SH-US	CH-VC	VC-CH	FR-WI	WI-FR
NatCH			+	+		+	-		-		-		-		-	-	-	-	-	+
NatGE	-				-		-		-	-	-		-	-	-	-		-		+
NatME	-	+	-	+	-	+	-		-		-		-	-	-	-	-	-	-	
NatUS		+	-	+		+	-	-	-		-	-	-	-	-	-	-	-	-	
Man			+			+	+	+		+		+	+	+		+		+	+	
Des				+		+		+		+		+				+		+		
Bra	+		+	+				+	+	+		+					+		+	

\* p < .1

\*\* p < .05

\*\*\* p < .01

**Country abbreviations:** CH= China; FR = France; GE= Germany; JA = Japan; ME = Mexico; US = United States

**Product abbreviations:** CA = car; CO = Cosmetics; SS = Sound systems; SH = Shoes; VC = Vacuum Cleaners; WI = Wine