

# Twenty Years of Country-of-Origin Food Labeling Research: A Review of the Literature and Implications for Food Marketing Systems

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## Abstract

Recent legislation by the United States and European Union governments now mandates the provision of country-of-origin (COO) information at the point of purchase for a variety of meats, fruits, vegetables, and other assorted food products. To better understand the significance of these regulatory changes, two decades of existing COO food labeling research are synthesized, reviewed, and discussed. The implications for two primary sets of actors within aggregate marketing systems, consumers and practitioners, are then discussed from a macromarketing perspective. Based on the reviewed literature, the authors conclude that little generalizable knowledge about COO food labeling effects exists, and further identify a lack of sufficient theoretical application and development as a primary reason. Consequently, the exact impact of mandatory (and voluntary) COO labeling initiatives for consumers and practitioners still remains unclear and highly debatable. Thus, as these initiatives continue to make country-of-origin labeling more commonplace around the world, it is crucial that additional theory-driven research be conducted, especially from a macromarketing perspective, to foster more generalizable knowledge about the complex role of COO information in aggregate food marketing systems.

## Keywords

country of origin, COO, food marketing, food safety, food labeling, retailing, public policy and marketing, macromarketing

## Introduction

Dichter was the first to suggest that a product's country-of-origin (COO) might have a "tremendous influence on the acceptance and success of products" (Dichter 1962, p. 116). Shortly thereafter, Schooler (1965) conducted the first empirical test on the effects of country-of-origin labeling (COOL). Despite the fact that well over 1,000 articles have been published on COO effects since then (Usunier 2006), the most recent reviews of the existing literature illustrate that generalizable knowledge about its impact remains scarce (e.g., Pharr 2005; Usunier 2006).

These inconsistencies in COO research are especially problematic given that the U.S. Congress now requires retailers to provide consumers with COO information at the point of purchase (P.O.P.) for all meat, fish, fresh fruit and vegetables, chicken, goat meat, ginseng, pecans, macadamia nuts, and other covered commodities (Federal Register 2008). Similar approaches to mandatory labeling have been taken in other parts of the world, as well. For example, new labeling regulations in the European Union (E.U.) will require the provision of COO information on all fresh and frozen meat from sheep, pigs, goats, and poultry by December 2014 (mandatory

labeling of beef has already been enacted) (USDA Foreign Agricultural Service 2012).

Despite the fact that mandatory COOL has been characterized as one of the most controversial and widely contested food labeling programs ever (Loureiro and Umberger 2003), it clearly continues to increase in scope and significance at both domestic and international levels. Food labeling reform has historically been shown to exert great influence on marketing systems, and these mandatory COOL initiatives can be similarly expected to affect every level of the agricultural distribution and marketing process from consumers to practitioners. Therefore, it is important to assess whether existing COOL

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research within the context of food, specifically, can offer insight on the potential implications of these mandatory labeling initiatives for aggregate food marketing systems. As such, the purpose of this research is to: 1) provide a brief historical context of relevant food labeling policies, 2) organize and review relevant prior academic research on food COO labeling over a twenty year period (1990 to 2010), 3) analyze the state of our current knowledge in this area, and lastly 4) discuss the potential implications of recent COOL legislation for both consumers and practitioners.

### *Relevant U.S. and E.U. Food Labeling Legislation*

The impact of labeling initiatives on food marketing systems has been shown to rely heavily on the effectiveness of government intervention (Skilton and Wu 2013). Thus, we first present a brief review of the most relevant U.S. and E.U. government-mandated labeling initiatives that may provide insight into the precedent for, and emergence of, the current COOL legislation.

*U.S. Food Labeling Legislation* The Federal Food and Drugs Act and the Federal Meat Inspection Act were enacted in 1906 to protect the quality and safety of the U.S. public food supply, and represented the first authorization of the U.S. federal government to regulate the interstate traffic of food. By that point, though, the federal government had already required certain items (including many food items) imported into the U.S. to be labeled with COO information in accordance with the McKinley Tariff Act of 1890. However, a number of ambiguities and loopholes in the legislation kept certain items exempt. Consequently, the Tariff Act of 1930 served to close some of these gaps by eliminating labeling exemptions for imported items that “could not be or were not ordinarily labeled” (Peppler 2013). However, numerous exceptions were provided for in this legislation as well, including the exemption of labeling requirements for products that would be economically prohibitive to label such as fruits, vegetables, livestock, nuts, live or dead animals, and fish. Further, compliance requirements were met if shipping containers, rather than the individual products themselves, were marked with COO information (19 U.S.C. § 1304 [a] 2010). This piece of legislation represented significant regulatory steps toward the mandatory provision of product information in the U.S., and an initial step toward mandatory food information provision, in particular.

Decades of food labeling reform continued in the U.S. – the majority of which dealt with the (mandatory) provision and regulation of health and nutrition information – until the Farm Security and Rural Investment Act of 2002 and the Food, Conservation, and Energy Act of 2008 amended the Agricultural Marketing Act of 1946 (for a complete historical review of U.S. food labeling see Kolodinsky 2012). These laws, referred to as the 2002 and 2008 Farm Bills respectively, included language that made COOL mandatory for many more of the products that had previously been exempt under previous legislation. Specifically, the Farm Bills require U.S. retailers that exceed minimum purchasing amounts of fresh or frozen

produce in a calendar year (\$230,000) to create and maintain in-store signage that provides final consumers with COO information for meat, fish, fresh fruit and vegetables, chicken, goat meat, ginseng, pecans, macadamia nuts, and other covered commodities (Federal Register 2008). Retailers must also maintain records that identify the food, the immediate supplier, the origin information, and immediate subsequent recipient of the food (e.g., customer) for a period of one year from the transaction date (Agricultural Marketing Service (AMS) 2009). Similarly, any party such as a producer or wholesaler engaged in supplying any of the listed covered commodities to a retailer, whether directly or indirectly, must also provide COO information to their buyer and maintain records of the immediate previous source (if applicable) and immediate subsequent recipient of the commodity for a period of one year from the transaction date. While the stated purpose of mandatory COOL is to help consumers make informed purchasing decisions about the food they buy (Agricultural Marketing Service 2010), opponents of the legislation contend that it is politically and economically driven in that it enables consumers to more easily identify U.S. food products and purchase them in lieu of imported food products (Kolodinsky 2012; Newman and Kopp 2009).

### *E.U. Food Labeling Legislation*

Similar changes have recently occurred in the E.U., as well. Not long after the formation of the E.U. in 1993, Directive 2000/13/EC became effective and established uniform rules among all Member States regarding the labeling, presentation, and advertising of pre-packaged food items. In 2002, Regulation (EC) No. 178/2002, better known as the General Food Law, more generally established the common basis for modern food law in all Member States of the E.U., effectively harmonizing existing (disparate) national requirements. This initiative also established the European Food Safety Authority, as well as a number of food safety procedures (European Commission 2013).

More recently, Regulation (EU) No. 1169/2011 made the provision of COO information mandatory for poultry, swine, sheep, and goat products. Similar provisions have also been enacted for beef, veal, fish, fruits and vegetables, eggs, wine, honey, aquaculture products, olive oil, and organic products carrying the E.U. logo (USDA Foreign Agricultural Service 2012). The European Commission is also currently considering COOL requirements for milk, products that have milk or meat as an ingredient, unprocessed foods, single-ingredient products, ingredients that comprise 50% or more of a food product, and other types of meat not covered under the current legislation. Compliance is expected at all stages of the food supply chain for any regulated foods bound to final consumers by December 2014. Similar to the U.S. COOL initiatives, the stated purpose of the E.U. legislation is to enable consumers to identify and make appropriate use of a food and to adapt with consumers’ changing information needs, though criticisms about the need for– and motivation behind – it still abound (e.g., Peter 2011).

These recent regulatory changes in the E.U. and U.S. highlight the need to better understand the impact of COOL on consumers and practitioners. Accordingly, we will now review and analyze twenty years of previous COO food labeling research in order to seek insight on the potential implications of such mandatory labeling initiatives for domestic and international food marketing systems.

### Country-of-Origin Food Labeling Review: 1990-2010

**Methodology.** Existing COO reviews differ in both scope and methodology, and present unique perspectives on different areas of the COO literature. Despite differing approaches, each review reaches the similar conclusion that the complexity of COO effects are still mostly misunderstood and warrant future research. To our knowledge, only one review of COOL has ever been conducted within the context of the global food industry (Skaggs et al. 1996). However, this review encompassed twelve articles, only one of which was published in the time period considered by the present review. The authors of the prior review concluded, "As food marketing continues the globalization process, an understanding of consumer behavior and decision making around the world will be imperative" (Skaggs et al. 1996, p. 599).

Therefore, this article attempts to organize and analyze the extensive, unreviewed body of literature focused on the COOL of food products around the world. However, the existing research on COO food labeling spans numerous academic fields (e.g., marketing, agricultural economics, management, public policy) with both domestic and international focuses. Past authors of COO reviews have noted that COO is a prolific research category (Pharr 2005), and have consequently set specific boundaries regarding the extent of their reviews. Thus, the scope of this review must too be defined. As such, this review encompasses academic, peer-reviewed COO food labeling studies from 1990 to 2010 - a time period that precedes the first quantitative review of COO research (Liefeld 1993), and includes over fifteen years of research within the context of food labeling that has not yet been reviewed to the our knowledge.

In order to systematically analyze the literature from the past two decades, any peer-reviewed academic study that considered the COO of food products was included in this review. COO could be indicated by "Made in\_\_", "Grown in\_\_", "Produced in\_\_" or similar information presented to respondents that indicates a food product's origin. However, since the focus of this review is exclusively on *country* of origin labeling studies, any study that examined labels referring to other geographical origins such as transnational, regional, or local origins (e.g., Made in Europe, Grown in the Midwest, or Produced Locally, respectively) were excluded. We defined "food" as any edible product that is grown, manufactured, or processed.

Ultimately, over 150 articles in 60 scholarly journals from over a dozen academic fields were reviewed. We used LexisNexis Academic, Business Source Premier, Google Scholar, Academic

Search Complete, and JSTOR search databases to locate and analyze the appropriate articles. We also referred to a number of non peer-reviewed sources such as government documents, media and press releases, websites, consumer interest groups, and other non-governmental organizations' materials via an Internet search in order to gain factual background information on the legislative initiatives. Because these sources were not peer-reviewed academic articles, they were not included in the review, itself.

**Literature Review.** Consumers and practitioners are two primary sets of actors within aggregate marketing systems that are of central interest to macromarketers (Wilkie and Moore 2006). Thus for the purpose of discussion, each article in the COOL literature review below was organized into one of two categories based on its main focus: 1) the impact of COOL on *consumers*, or 2) the impact of COOL on *practitioners* (e.g., marketers, managers, producers, growers, supply chain members, etc.). Once assigned to a category, each article was then organized according to the main dependent measure examined (e.g., attitudes, preferences, trade flows, vertical coordination, etc.). Considering that "the impact of COO cues is jointly determined by study characteristics and the nature of the dependent variable being used" (Peterson and Jolibert 1995, p. 895), we feel that this approach allows researchers and practitioners to conduct analyses of key dependent measures across different time periods and academic disciplines. This approach also allows researchers and practitioners to directly compare COO studies that have assessed the impact of COOL on individual consumer behavior from a micromarketing perspective to the smaller number of COO studies that have examined the impact of COOL on practitioners and other broader, more comprehensive dependent measures from a macromarketing perspective. It is our intent that this approach will evoke a more thoughtful examination of not only the effects of COOL on consumers and practitioners, independently, but also the cumulative COO effects when these two parties are considered together as (largely) interdependent sets of actors within aggregate food marketing systems.

**The Impact of COOL on Consumers.** The authors first reviewed articles that primarily focused on the impact of COOL on consumers. The majority of these articles was published in marketing and business journals, and employed consumer decision-making models to determine how COOL information is incorporated as an extrinsic cue into consumers' decision-making processes. The most common dependent measures examined in these studies (and thus the measures that will be discussed here) include: attitudes, evaluations, perceptions, preferences, willingness-to-pay, purchase intentions, and purchasing behavior. For the sake of brevity, what follows is a review of selected articles for each dependent measure.

**Attitudes.** Not surprisingly, many studies have focused on consumer attitudes toward food using COO information as a distinguishing characteristic. For example, Pecher and Tregear

(2000) found that the origin country influenced consumers' attitudes in the UK toward German cheese. Schupp and Gillespie (2001) obtained similar findings when they explored consumer attitudes toward fresh and frozen beef. However, they also discovered that while origin was important in shaping consumers' attitudes for the product, it was more important for beef sold in grocery stores than in restaurants. Another study investigating beef products confirmed the importance of COO and its influence on attitudes, and found that it is the single most important determinant for consumer attitudes toward meat (Mennecke et al. 2007).

Other research has examined attitudes toward alternate food labeling programs. In determining beef quality, Roosen, Lusk, and Fox (2003) found that COO labels were more important to consumers than brand labels. COO certifications, along with other information about product traceability, were valuable to consumer attitude formation (Ward, Bailey, and Jensen 2005). This was shown to be especially true in the case of disease outbreaks. For example, Ward, Bailey, and Jensen (2005) studied U.S. consumers before and after an outbreak of Bovine Spongiform Encephalopathy (BSE or Mad-Cow Disease) in 2003, and found that COO and traceability information had become more important to consumers.

However, some existing research has reported no relationship between COOL and consumer attitudes. Ahmed et al. (2004) explored consumers' attitudes toward bread and coffee and found that the origin country did not influence attitudes regarding these types of products. When COO was used together with other cues such as price and brand, though, its influence lessened and brand became a more important determinant of consumer attitudes. Suwannaporn and Linnemann (2008) reported similar findings when exploring consumers' attitudes toward Jasmine rice. While COO had an influence on attitudes, it had less of an impact than quality, price, and other marketing activities.

**Evaluations.** A number of studies have also examined how COOL affects consumer evaluations. For example, COO was found to be one of the most important evaluative cues for consumers in China (Kaynak and Kucukemiroglu 2001) and in Lithuania (Krutulyte, Costa, and Grunert 2009). Czech consumers' evaluations were also affected by origin information, but they evaluated foreign food more positively than domestic food (Orth and Ji'í Letal 2001). However, a subsequent study of Czech consumers taking ethnocentrism into account demonstrated that ethnocentric individuals evaluated Czech food products more positively than less-ethnocentric individuals (Orth and Firbasová 2003).

A number of other external factors influence COO effects on consumer evaluations. For example, Chu et al. (2010) considered the impact of brand strength and found that COO influenced Taiwanese consumers' product evaluations for both strong and weak brands. DeBono and Rubin's (1995) data indicated that food evaluations for individuals who were high self-monitors (i.e., individuals who pay close attention to their social surroundings and adjust their behaviors accordingly)

were influenced by origin information, whereas low self-monitors' evaluations (i.e., evaluations from individuals who behave in a way that is congruent with their overall attitudes, values, and beliefs regardless of their social situation) were based on the actual taste of the product rather than its origination. Other factors, such as consumer expertise and attribute information, have also been shown to interact with COO effects to affect consumers' evaluations (Maheswaran 1994).

**Perceptions.** Aside from attitudes and evaluations, COOL has also been shown to influence consumer perceptions. McCarthy and Henson (2004) found that consumers view a labeling program that provides COO information as a way to minimize food safety risks, especially in the meat industry. Smith and Middleton (2008) also reported that origin information was perceived as more important to U.S. consumers than price, grade of beef, or source assurances. Similarly, COO was shown to be one of the most important cues demanded by European consumers on meat products (Bernués, Olaizola, and Corcoran 2003).

The specific effects of COO on consumers' product and brand quality perceptions have also been studied extensively. Generally speaking, researchers have concluded that consumers have more positive perceptions of domestic food than foreign food (e.g., Pouta et al. 2010). Further, consumers tend to perceive domestic food products as safer than those produced elsewhere (Lobb and Mazzocchi 2007). U.S. respondents, for example, perceived domestic, farm-raised shrimp to be of higher quality than shrimp imported from other countries (Wirth, Love, and Palma 2007). Similarly, Greek consumers associated domestic meat with higher quality perceptions and safety (Krystallis, Chryssochoidis, and Scholderer 2007). Bangladeshi consumers, in contrast, perceived Western food products to be of superior quality than domestic food products (Kaynak, Kucukemiroglu, and Hyder 2000). COO had no effect on quality perceptions in Germany, Spain, the UK, and France (Grunert 1997).

**Preferences.** Consumer preferences for food products have also been shown to be influenced by COOL. Existing research shows that many consumers are ethnocentric, preferring to buy food originating from their home country (Ehmke, Lusk, and Tyner 2008; Parts 2007). For example, Canadian consumers were found to prefer domestic, rather than imported, beef and pork (Quagraine, Unterschultz, and Veeman 1998). Similarly, U.S. consumers were shown to prefer domestic products because they wanted to support U.S. producers, and felt that U.S. beef was of higher quality than beef from other countries (Umberger et al. 2003).

Consumer preferences for COO information, itself, have also been considered in the existing literature. In general, research shows that consumers prefer to have COO information available on food items because they are concerned about the safety and healthfulness of foreign produce (Puduri, Govindasamy, and Onyango 2009). However, actual USDA food safety inspection assurance was found to be more important than COO information in a beef-related study

(Loureiro and Umberger 2007). Considering both consumers' preferences for COO information, as well as their preferences for certain food items based on that information, Elliott and Cameron (1994) examined Australian consumers' preferences for jams and found that COO information was of low importance relative to price and product quality attributes. However, when product quality information was equivalent, COO increased consumers' preferences for local products. Thus, the type and amount of information given to consumers about specific food items can influence the amount of attention that consumers devote to COO information, as well as their preferences for the food items.

**Willingness-to-Pay.** A highly researched dependent measure is consumers' willingness-to-pay (WTP) for COO information. In many cases, consumers have demonstrated a higher WTP due to perceived improvements in food safety associated with the labels. In Dickinson and Bailey (2002), for example, they were willing to offer more for attributes that aid traceability, and the authors concluded that a profitable market might exist for developing more formal food traceability systems in the U.S. Building upon this notion, Loureiro and Umberger (2003) found that U.S. consumers were willing to pay approximately \$184 more per household annually for COO information.

Additionally, it has been demonstrated in a variety of contexts that consumers are willing to pay more for domestic food than imported food. For example, consumers from France, Denmark, Sweden, and the UK offered about 5% more for pork with domestic labels (Dransfield et al. 2005). Similarly, Norwegian consumers reported WTP price premiums for domestic beef, but not for imported beef from the U.S. (Alfnes and Rickertsen 2003). In some cases, it has been suggested that consumers' WTP price premiums for domestic food stems from associations between origin and taste. Umberger et al. (2002) showed that the origin of beef was associated with consumers' taste perceptions, and that consumers were willing to pay more for tastier beef. In contrast, Japanese consumers' low WTP for U.S. rice was driven by negative perceptions of flavor (Peterson and Yoshida 2004).

**Purchase Intentions and Purchase Behavior.** Lastly, consumers' purchase intentions and purchase behavior are two very under-researched, yet critically important, constructs in the food COOL literature. The existing research on purchase intentions is generally mixed. For example, Turkish consumers switched their purchase intentions in favor of foreign-made chocolate from domestically made chocolate when presented with COO information (Camgoz and Ertem 2008). However, COO cues did not influence purchase intentions of Mexican consumers unless the product was specifically associated with Mexico's heritage (Almonte et al. 1995).

Actual purchase behavior is the least researched dependent measure concerning the impact of COOL on consumers. Similar to purchase intentions, the results are mixed; one study analyzed U.S. consumers' purchasing patterns of shrimp before and after the implementation of mandatory COOL and concluded that those consumers responded neither favorably or

unfavorably to the new labels (Kuchler, Krissoff, and Harvey 2010). However, Bailey and Gutierrez de Pineres (1997) found that COO cues influenced the purchase behaviors of higher-income Mexican consumers. They described a "Malinchismo" effect in which these consumers tended to purchase more imported food products simply because of their foreign origin.

**The Impact of COOL on Practitioners.** As shown, there is a substantial amount of existing literature concerned with the effects of COOL on consumers. However, the impact of COOL on practitioners – another primary set of actors in aggregate food marketing systems – is also of great interest from a macromarketing perspective. Thus, we now review articles that have specifically examined effects of COOL on practitioners, the majority of which were published in food science, economic, and agriculture-related academic journals. Economic models were employed in many of these articles to predict and assess the impact of COOL on producers, processors, managers, retailers, and other members of the supply chain. The most common dependent measures examined in these studies (and thus the measures that will be reviewed here) include social welfare, cost sharing, vertical coordination and traceability, and international trade flows. Again for the sake of brevity, what follows is a review of selected articles for each dependent measure.

**Social Welfare.** Macromarketing research on COOL effects focuses more on whether or not the associated societal benefits outweigh the societal costs, as opposed to if private benefits outweigh private costs (Golan, Kuchler, and Mitchell 2001). Prior research indicates that the goal of government-mandated labeling is to serve three main purposes with the intent of increasing social welfare in some regard. More specifically, mandatory labeling should ensure fair competition among manufacturers and producers, provide consumers with more information, and increase consumer health and safety (Golan, Kuchler, and Mitchell 2001). Mandatory COOL may serve to accomplish the second purpose by addressing the issue of asymmetric information in the market. This increase in symmetrical information between sellers and buyers may increase the efficiency of the market by supporting informed consumption. For example, Dinopoulos, Livanis, and West (2010) developed an open-economy model to demonstrate that free trade is suboptimal without the presence of mandatory COOL. They concluded that the presence of a COOL program maximizes national welfare when coupled with free trade.

Another potential benefit of mandatory COOL may be favorable product reformulation. The potential decrease in sales that could result from the forced disclosure of negatively perceived product source information may incentivize producers and retailers to discontinue buying products from countries with lower health and safety regulations or questionable labor practices (Golan, Kuchler, and Mitchell 2001). This would potentially enhance fairer, more transparent competition and increase consumer health and safety – both objectives of mandatory labeling. The combined knowledge of consumer behavior and economic theory suggests that other policy tools (i.e. bans, quotas,

regulations and taxes) may also be effective in addressing market externalities and increasing social welfare across the entire food system.

**Cost Sharing.** Compliance with mandatory COOL requirements can be daunting, and the associated costs are often shared among supply chain members. For example, the USDA predicted a 1.5 cent per pound increase for cattle slaughterhouses and a 7 cent per pound increase for beef retailers (Agricultural Marketing Service 2002). Similarly, Rude, Iqbal, and Brewin (2006) traced the added costs of mandatory COOL through the pork sector supply chain using a partial equilibrium non-spatial model and determined that the retail transaction cost it carries is 7.5 cents per pound. These costs are shared between consumers and practitioners, with an average final price increase of 2.3 cents for consumers and an average selling price decrease of 5.2 cents for processors. The total cost of implementation and record-keeping in the pork sector, specifically, was estimated to be between \$3.66 and \$5.6 billion (Sparks Companies 2003). Jones, Somwaru, and Whitaker (2009) estimated the impact of COOL on world markets using a global static general equilibrium model (STAGEM) and determined that the increased prices would result in decreased production and create net welfare losses for the U.S. and other globalized economies. According to this predictive model, all affected agriculture sectors would demonstrate increased prices and decreased exports with only live cattle and hogs, fish and perishable commodities such as fruits and vegetables experiencing small, positive import gains (Jones, Somwaru, and Whitaker 2009).

**Vertical Coordination and Traceability.** Traceability within aggregate food marketing systems refers to the information trail that follows the physical trail of food from farm to table, and can affect every member of the supply chain - including the end consumer. The ability to verify the accuracy of stated source information requires increased traceability as products move through the food system. That is, as information is passed from one actor to the next within the supply chain, verification of that information must be able to move forward from farmer to end consumer and be traced backward again. Thus, vertical coordination is central to successful traceability efforts.

Banterle and Stranieri (2008) found that retailers strengthen their vertical coordination through increased planning, consulting, system management, and controls within the Italian meat supply chain. Other members of the network stated that strengthened vertical coordination in the form of voluntary participation in traceability agreements led to better distribution of liability among members, as well as better relationships overall. This increased vertical coordination also led approximately 2/3 of the network members to realize increased sales and heightened food safety standards.

Aside from the practical concerns of price and value, Knight, Holdsworth, and Mather (2007) found that trust in producers and intermediaries, as well as trust in their products, were important factors considered by channel gatekeepers. These gatekeepers identified traceability as an issue of increasing importance form

and a form of insurance. For example, Chrysochou, Chrysochoi-dis, and Kehagia (2009) found that electronic forms of traceability information carriers (RFID and barcode systems) were viewed as more credible and reliable than traditional labels, but were not deemed as convenient or safe. Smith et al. (2005) concluded, in part, that the implementation of traceability systems would aid compliance with government and wholesale-customer required COOL and other value-added marketing efforts. However, they also concluded that the development and implementation of food traceability systems in the U.S. lags behind many countries, particularly in the livestock and poultry segments. Similarly, Schwägele (2005) analyzed traceability in Europe and determined the need for more traceability system implementation at the pan-European level. Thus, traceability of food is an important, yet arguably under-utilized, potential benefit of COOL.

**International Trade Flows.** Lastly, the impact of COOL on international trade flows has also been demonstrated in the literature (e.g., Brewster, Marsh, and Atwood 2004; Chung, Zhang, and Peel 2009; Insch and Florek 2009; Rude, Iqbal, and Brewin 2006). For example, Rude, Iqbal, and Brewin (2006) analyzed the impact the U.S. COOL legislation could have on the Canadian pork industry and highlighted the interdependence between common trading countries in doing so. They suggested that if demand for U.S. pork decreased due to COOL, Canada would need to increase its off-shore pork exports due to its decreased exports of live hogs for slaughter to the U.S. As this example illustrates, COOL may shift trade flows such that more trading takes place among non-mandated countries, while mandated food markets increase domestic production and/or trade with fewer countries in order to minimize overhead costs. These shifts in trade flows may then create international disputes over possible trade agreement violations.

Similarly, Insch and Florek (2009) concluded that increases in COOL compliance costs could lead to reductions in global trade, resulting in increased commodity prices and decreased production, producer welfare, and consumer welfare. However, Kawashima and Sari (2010) examined how COOL can impact trade flows to benefit consumers and producers that meet high safety standards. They demonstrated that COOL had the greatest impact on consumer demand for domestic relative to imported beef during and following beef-related disease outbreaks - even more so than price changes and import liberalization.

**Strengths and limitations of our current knowledge of COOL in the food industry.** From this review of the past twenty years of COO food labeling, it is apparent that some research areas are more fully developed than others. Consequently, this has led to asymmetrical knowledge of this body of literature. Drawing from the reviewed literature, the authors now summarize and discuss the strengths and limitations of our current knowledge of COOL in the food industry as it relates to both consumers and practitioners.

**Impact of COOL on consumers.** First, the majority of the literature focused on the impact of COOL on consumers utilized a

micromarketing, rather than macromarketing, perspective. So too did the majority of COOL studies, in general. That is, COO information was found to often have strong effects on consumer attitudes, perceptions, evaluations, and preferences. Generally speaking, attitudes tended to be more positive toward domestic products than foreign or imported products, and domestic food was mostly perceived to be safer and of higher quality, evaluated more positively, and preferred more than imported food. However, these effects were occasionally reversed in poorer, less-developed countries. Additionally, these effects appear to be sensitive to other environmental factors such as category membership. For example, imported foods from countries that have traditional reputations for producing very high quality products (e.g., Argentinian beef or Swiss chocolate) often elicited more positive consumer responses than domestic offerings of the same nature. A number of individual-level factors such as ethnocentrism, expertise, self-monitoring, and demographics were also shown to influence the effects of COO information on attitudes, perceptions, evaluations, and preferences, suggesting that such effects are both complex and variable. Research on consumers' willingness-to-pay for COO information revealed that consumers were generally disposed to spend more for domestic food than imported food. Food safety and traceability were the most often cited driving forces behind these findings. WTP, like the previously mentioned variables, was also shown to vary according to product category and consumer characteristics.

Lastly, purchase intentions and actual purchasing behavior remain the most overlooked dependent measures related to individual consumer behavior responses to COOL. As shown in comparable bodies of literature dealing with credence attribute food labels, such as "genetically modified for superior nutritional value" (e.g., Lusk 2003), large discrepancies often exist between consumers' stated WTP values and their actual purchasing behavior – a phenomenon referred to as "hypothetical bias" (e.g., Murphy et al. 2005). However because so few studies have focused on consumers' purchase behavior, this potential bias has been largely unaccounted for in the existing research on the impact of COO on consumers, possibly adding to the generalizability difficulties noted in the reviewed literature. Overall, the influence of COO was often minimized when used in conjunction with other food label information, regardless of the dependent measure studied. This observation supports Peterson and Jolibert's (1995) meta-analytical conclusion that the COO effect is stronger for single cue studies than multiple cue studies. It also may help explain why some studies found no association at all between COO provision and consumer responses.

*Impact of COOL on practitioners.* In contrast, a smaller number of reviewed COO studies took a largely macromarketing approach to assess the impact of COOL on practitioners and larger aggregate food marketing systems. These studies mostly focused on the effects of COOL on topics such as social welfare, cost sharing, vertical coordination and traceability, and international trade flows. Similar to the effects of COOL on

individual consumer behavior, this portion of the reviewed literature too demonstrates inconsistencies. Previous research suggested that promoting information symmetry via COOL in markets can enhance the welfare of society as a whole, and that compliance with COOL requirements can lead to increased vertical coordination in supply chains. An increase in food safety was also noted as another potential benefit of COO information at the aggregate level. More specifically, it was suggested that COOL may be able to promote food safety by providing a traceability system that connects numerous parties in food marketing systems.

However, it was shown that these benefits likely come at a cost. Practitioners are often forced to find ways to share the liabilities and costs associated with COOL compliance with other members of the supply chain, and predictive models demonstrated that these costs could be passed on to consumers in the form of higher retail food prices. Further, prior research showed that international trade flows may be affected by practitioners' reactions to COOL requirements. Trading partners affected by U.S. and E.U. labeling requirements, either directly or indirectly, may increase or decrease their imports and exports based upon which strategy best serves their own interests. This behavior could be problematic for relationships between food marketing systems, and may run counter to the task that government organizations and policy makers have to make certain that labeling initiatives such as COOL ensure social welfare, promote social stability, and encourage fair competition (Charlebois and Labrecque 2009).

*Theory development in the COOL literature.* Regardless of whether a macromarketing or micromarketing approach is taken, the lack of theoretical application and development remains a major weakness in the overall COOL literature. Calls for more rigorous theory testing in COO research began before the scope of this review and continue with this article (e.g., Li and Dant 1997; Obermiller and Spangenberg 1989; Samiee 1994). The need for a comprehensive theory of food labels has also been previously suggested as well (Caswell and Padberg 1992). In one of the most recent reviews of COOL, Pharr (2005, p. 42) noted,

As the number of variables purported to influence COO has increased (and the hypothesized relationships between them become increasingly complex) a greater need for holistic testing now emerges. Unfortunately, to date and on the whole, very little structural modeling has been applied to the COO paradigm and never in a holistic manner.

Additionally, inconsistencies among (and even inappropriateness of) study contexts, methodologies, and operationalization have also been noted in COOL research (Bhaskaran and Sukumaran 2007; Lim and Darley 1997; Olsen and Olsson 2002; Pereira, Hsu, and Kundu 2005). As such, these theoretical and methodological shortcomings have led to an emerging pattern over time in which researchers question the generalizability of COO effects.

However, despite these previous admonishments, it would be erroneous to assume that theory has not been resolutely and

successfully applied to COO research. In fact, a number of theoretical frameworks have been used to study origin effects including public choice theory (Chang 2009), the elaboration likelihood model (Petty and Cacioppo 1979), the heuristic-systematic model (Chaiken 1980), discrete emotions (Maheswaran and Chen 2006), cue consistency theory (Miyazaki, Grewal, and Goodstein 2005), processing motivation (Gürhan-Canli and Maheswaran 2000), and social identity theory (Verlegh and Steenkamp 1999), to name a few. Additionally, a number of economic models and multi-attribute attitudinal models have been created to capture and predict consumer responses to COOL (e.g., Krissoff et al. 2004; Loureiro and Umberger 2003).

However, the replication and extension of these theories in the COOL literature is scant. Further, nearly all of the published studies that have taken a micromarketing perspective of COOL effects have failed to consider additional macromarketing factors that would likely provide a more holistic perspective of the impact of COOL. Indeed, it has been previously argued that the macro and structural factors that frame and constrain individuals' attitudes, preferences, and choices are more important to understanding private consumption than individual consumers' actual decision-making and behaviors (e.g., Etzioni 2009; Kilbourne, McDonagh, and Prothero 1997; Thøgersen 2010).

Conversely, a critical limitation of studies that have taken more of a macromarketing perspective to assess the impact of COOL is that they have often failed to consider individual consumer responses and individual consumer difference variables that may underlie and drive the effects of COOL on larger aggregate food marketing systems. For example, multi-sector models often suggest that food producers are only able to benefit from mandatory COOL when the labeling increases consumer demand for domestic products (e.g., Chung, Zhang, and Peel 2009). Also, many of the predictive economic models used to estimate the impact of COOL within the food supply chain require assumptions of consumer behavior in order to most accurately predict changes in production, supply, and price (e.g., Brewster, Marsh, and Atwood 2004). These points nicely illustrate the need to holistically consider both individual-level factors and broader macro factors when determining the overall impact of COOL. However, with the exception of a few studies (e.g., Philippidis and Hubbard 2003), few existing COO studies have taken this approach.

Thus, bringing micromarketing and macromarketing approaches together may bridge the current gaps in our COOL knowledge by combining knowledge of individual consumer behavior with predictive economic models concerned with broader macromarketing issues associated with COOL such as societal welfare, supply and demand, vertical coordination among supply chain members, international trade flows, traceability, and cost sharing. For instance, an academic study suggesting that the presence of COO information can lead consumers to make healthier food purchasing decisions (i.e., buy more fruits and vegetables) is arguably a noteworthy observation in itself. However, this contribution could be strengthened by

utilizing a macromarketing perspective in a complementary fashion to better understand what the broader implications of these findings for societal health and welfare would be, if any. This viewpoint could also facilitate the consideration of potential implications for other groups in aggregate food marketing systems such as practitioners. Would suppliers of fruits and vegetables experience disproportionately higher sales compared to suppliers of less healthy foods as a result of COOL?

In contrast, the findings of macromarketing research that suggest fluctuations in international trade flows (i.e., increases or decreases in exports and imports from certain countries) are potential implications of mandatory COOL initiatives could be strengthened by complementary micromarketing research that examines how the nationalistic or ethnocentric tendencies of individual consumers may interact with the provision of COO information to influence their food purchasing decisions at the retail level. This micro viewpoint offers (incremental) explanations as to why these broader patterns and trends associated with COOL seem to emerge at the macro level. Therefore, the proposed dual approach method should lead to a more comprehensive theory of food labeling.

It should be noted, however, that the role of the State and its institutions has also been largely overlooked in most of the existing literature and theory testing of COOL effects. Food consumption and habits are highly complex (e.g., Warde 1997; Warde 2005) – as are the processes of food production and distribution – and will only likely increase in complexity as they continue to become more globalized. Given that the State is largely responsible for not only creating and passing food-related legislation, but also enforcing it in the marketplace, the importance and influence of the State will likely increase, as well.

As such, the influence of the State on both consumers and producers should be more fully considered in COOL research. For example, compliance rates associated with the presentation and accuracy of COO information – one of the many factors that the State is directly responsible for enforcing – can have a considerable impact on the nature of COOL effects on food marketing systems. Thus, the State must ensure that all members of supply chains (i.e., practitioners) remain compliant during their international and national exchanges at more macro levels, while also ensuring that consumers receive accurate COO information to use in their decision-making processes at a more micro level. In addition, the manner in which governments handle any domestic (and particularly international) disputes surrounding COOL could greatly influence a number of micro and macro issues such as international trade flows, vertical coordination among supply chain members, cost-sharing initiatives, and consumers' feelings toward certain countries (which may in turn affect their purchase and consumption behavior).

Lastly, consider that food consumption patterns generally tend to be internally differentiated, yet habitually collective. That is, consumers make unique consumption decisions, but are also often exposed to similar sources of persuasion such as commercial advertising, word-of-mouth, news outlets, and in many cases now COOL. These lead to collectively shared



tastes and consumption patterns (Warde 1997, p. 3; see also Warde 2005). As such, the complementary holistic testing of both micro-level and macro-level factors may be able to account for these patterns in individual and collective food consumption, respectively. This approach could potentially lead to more general theories of food information or food consumption behavior, in which COO could be considered an important information cue that influences such patterns. The simultaneous consideration of micro and macro factors – as they specifically relate to consumers, practitioners, and the State – would likely help to build and strengthen theoretical frameworks. In doing so, perspectives from the otherwise less tangential disciplines of marketing, sociology, food science, agricultural economics, public policy, and consumer studies (to name a few) would also be better integrated, leading to more generalizable knowledge about COO effects.

### *Implications for Aggregate Food Marketing Systems*

This concluding section integrates a number of main takeaways from the reviewed COOL literature into an informed discussion about how the recent U.S. and E.U. COO food labeling initiatives may affect consumers and practitioners around the world. This discussion is meant to inform current debates about mandatory COOL initiatives and to generate possible future COOL research ideas.

As Bech-Larsen and Aschemann-Witzel (2012) note, numerous accounts of stakeholders and exchanges in food marketing systems have been considered from a macromarketing perspective (e.g., Arndt 1981; Baker, Gentry, and Rittenburg 2005; Charlebois and Labrecque 2009). Regulated COOL public policy initiatives in the U.S. and E.U. represent a step toward increased globalization of food marketing systems, and serve as a salient reminder that many food marketing systems around the world are connected through domestic and international exchanges. Hunt (1981) described macromarketing as a study of such exchanges and stakeholders in a given marketing system, in addition to both the impact of that marketing system on society and the impact of society on the system. From this perspective, the mandatory provision of COO information can be expected to have a substantial societal influence through its implications for two primary stakeholder groups within aggregate marketing systems, consumers and practitioners, which are both of specific interest to macromarketers (Wilkie and Moore 2006). The success and sustainability of such initiatives, however, lie largely in their ability to deliver value to these affected marketing systems (Mittelstaedt, Kilbourne, and Mittelstaedt 2006). Thus, we now discuss the potential implications of the recent COOL legislation for each of these groups.

*Potential implications of mandatory COOL regulations for consumers.* An examination of the current state of mandatory COOL implementation and compliance processes in world markets (as discussed previously), coupled with a thorough consideration of the previously reviewed literature on COO effects, suggests a number of potential implications of mandatory COOL

for consumers. As noted, COOL is contributing to the globalization of food marketing systems, and these changes will likely result in an increased number and variety of foods available to many consumers. A number of different consumer decision-making models in the existing literature point to COO information as an important external cue that influences consumer behavior. For example, consumers may be able to use COO information to more easily decipher between domestic and imported foods at the retail shelf in the presence of more options and variety, thus potentially attenuating consumers' growing anxiety related to increased global food choices (see Warde 1997). This cue information may also better connect consumers and producers, and ultimately lead to more globalized food consumption patterns and trends.

Next, the effectiveness of COOL has been shown to depend on the number of other attributes presented on the product. More specifically, the importance of COO information tends to increase as the number of other available product attributes decreases (Gao and Schroeder 2009). As such, COO information may serve as a substitute for other missing product attributes (Gao, Schroeder, and Yu 2010). For example, consumers have been shown to pay positive premiums for traceability and food safety assurances (Dickinson and Bailey 2002), but results from a recent international survey show that 76% of consumers find it difficult to locate food product safety information (Flynn 2012). In this sense, mandatory COO information may enable consumers to better avoid potentially dangerous, contaminated foods coming from specific countries. Additionally, consumers consider origin information in their evaluations of food healthfulness (Newman and Howlett 2010), and marketing campaigns centered on food origin information are positively associated with increases in fruit and vegetable consumption (Howlett et al. 2012). Thus, mandatory COOL may serve as a proxy for other information deemed valuable by consumers, such as food safety, traceability, and health information.

However, a number of potentially negative consequences of mandatory COOL also exist for consumers. While the globalization of food marketing systems offers increased food options that may benefit some consumers, it may also cause other consumers to experience choice or information overload, thus leading to decreased consumer satisfaction. Conversely, consumers may also experience restricted access to select food items in some cases if suppliers do not have the ability or motivation to continue trading with countries that require mandatory COO information. Further, the problem of inaccurate or absent COO declaration still lingers despite a large increase in compliance rates among retailers (Agricultural Marketing Service 2012a, 2012b). This information asymmetry can lead to inadequate consumer-oriented communications and result in imperfect consumer purchasing decisions (Kolodinsky 2012). Also as previously mentioned, practitioners are expected to incur large increases in compliance costs that will likely be manifested in higher retail food prices for consumers. As such, consumers may pay more for food items labeled with mandated COO information, regardless of their demand for such information.

Thus, consumers who do not value or desire COO information may see COOL initiatives as unfair and unnecessarily financially burdensome.

From a macromarketing perspective, the success of mandatory COOL also relies partly on the extent and manner in which consumers respond to changes brought about by the legislation (i.e., consumers' impact on COOL initiatives). For example, the availability of COO information may not justify increased food retail prices to consumers, and they may purposefully avoid certain food products, categories, or providers as a result. Undesirable, misinterpreted, or mistrusted COO information may also lead to similar negative outcomes. (Mis)trust may play an especially important role in consumer responses to COOL, as consumers have historically displayed a high tendency to alter their risk and trust perceptions when substantial changes occur in food retail marketplaces (Kolodinsky 2012; Veeck, Yu, and Burns 2010). Unless consumers have high trust in food label information, origin labels can have a negative effect on credence attributes related to the products and their providers (Newman and Howlett 2010). Lastly, the manner in which consumers respond to COOL likely depends upon the cultural values and norms of their country. National traits such as food culture, value orientations, environmental concern, and income levels could be expected to influence consumers' reactions (Thøgersen 2010), thereby also influencing the extent and rate at which food consumption and marketing systems are globalized. Ethnocentrism and nationalism levels could similarly influence consumers' impact on COOL initiatives.

*Potential implications of mandatory COOL regulations for practitioners.*

Mandatory COOL initiatives can be expected to impact practitioners in a number of ways. New regulations may provide a variety of benefits to supply chain members including growers, producers, wholesalers, and retailers. First, mandatory COOL will likely lead to an increase in globalized food production. Supply chain members may be able to extend the scope of their marketing activities and form new international business relationships to meet increasing consumer demand for global food products. Next, COOL may result in significant changes to structural factors such as food pricing and premiums. Practitioners may be able to position their products more directly on COO information in order to shift emphasis from other product attributes (e.g., poorer quality) or to justify higher price points. For example, domestic origins of food items may be promoted to local consumers, whereas certain foods with foreign origins may be promoted and priced as premium products (e.g., Argentinian beef). Practitioners may also be able to couple COO information with information from other certification and labeling programs ("organic," "certified humane") to enhance perceptions of their products and garner premium prices (Loureiro and Umberger 2007). Practitioners may also be able to use COO information as a vehicle to promote the sustainability of local culture in place branding strategies (Askegaard and Kjeldgaard 2007). Lastly, consumers may evaluate retailers more positively when they are offered helpful food product information at the point-of-purchase (Newman,

Howlett, and Burton 2014). Thus, practitioners may benefit from positive halo effects associated with the provision of COO information (Jang and Chu 2012; Newman, Howlett, and Burton 2014; O'Shaughnessy and O'Shaughnessy 2000).

However, mandatory COOL may also lead to negative consequences for practitioners. First, international trade flows and vertical coordination may be adversely impacted. Growers and suppliers from countries where such labeling is not mandatory will still be required to maintain labeling records due to their exchanges with buyers who are directly or indirectly affected by the new food labeling legislation. Supply chain members may have to direct additional non-monetary resources toward increased communication and cooperation efforts to remain compliant, thus highlighting an important non-financial impact of mandatory COOL.

COOL may also negatively affect practitioners from a fiscal standpoint. The product stocking decisions of large retailers often have a great impact on the success of the other supply chain members (Bloom and Perry 2001). Retailers often increase shelf space for suppliers of more profitable products and decrease shelf space for less profitable ones – or simply remove them all together. Further, retailers tend to be more cooperative in joint-marketing efforts with more profitable suppliers (Baldauf et al. 2009; Sloot and Verhoef 2008). Product-country image has been shown to positively impact retailer-perceived brand equity, namely, how retailers perceive their suppliers' products and brands (Baldauf et al. 2009). Thus, relationships between supply chain members around the world may be strengthened or weakened as a result of COOL affected international trade flows. Practitioners are also expected to incur substantial increases in overhead costs as a result of mandatory COOL. According to a recent survey of U.S. retailers, large retail chains can spend anywhere from \$6 million to \$17 million annually on existing COOL compliance costs, depending on the number and size of stores affected (Food Marketing Institute 2013). These cost increases may reduce profits for supply chain members if consumers are not willing to pay increased retail prices for foods affected by COOL legislation. These potential problems underscore the importance of effective cost-sharing agreements among trade partners. As food production and consumption becomes more globalized, practitioners may acquire new partners to help share the burden of compliance costs.

While the potential effects of mandatory COOL on practitioners are noteworthy, practitioners' impact on these initiatives is also of interest from a macromarketing perspective. First, the efficacy of the legislation in the U.S. and E.U. relies heavily on the compliance of supply chain members. Every member from the grower to the retailer for a regulated food product must act in accordance with the law in order for accurate COO information to reach the end consumer. Higher levels of vertical coordination among members will likely increase the extent and rate at which food production and consumption is globalized. Next, the efficacy of the legislation also depends upon the accuracy of practitioners' record-keeping. Just as "greenwashing" describes conditions in which practitioners

offer dishonest sustainability information to consumers (McDonagh and Brereton 2010), we propose the term “origin-washing” here to describe instances where practitioners knowingly provide inaccurate origin information to other buyers or consumers. Imperfect or inadequate COO information stemming from non-compliance among practitioners can result in inferior product offerings and/or competitive barriers to entry (Kolodinsky 2012). Lastly, retailers must effectively communicate origin information at the point-of-purchase. Consumers may not incorporate this information into their purchasing decisions if it is not clearly communicated to them, regardless of whether the information is accurate or not. Thus, the ability to successfully communicate credible point-of-purchase information, such as COOL, may become an increasingly important point of competitive differentiation amongst practitioners, especially retailers (Newman and Kopp 2009). These potential implications highlight the interdependence of practitioners and mandatory COOL initiatives, and speak to the increasingly important need for enhanced vertical coordination among supply chain members to remain compliant with the objectives of the current legislation.

## Conclusion, Limitations, and Future Research

The food industry provides an important context in which to examine how societies affect marketing systems, and conversely how marketing systems affect societies (Polsa and Fan 2011). Sweeping regulatory changes are currently occurring around the world that will most definitely influence aggregate food marketing systems in a variety of ways. In order to better understand the potential impact of these changes, this article has reviewed country of origin labeling – “one of the most widely studied phenomena in all the international business, marketing, and consumer behavior literatures” (Peterson and Jolibert 1995, p. 883) – within the context of the global food industry. To accomplish this, we 1) provided a brief historical context of relevant food labeling policies in the U.S. and E.U., 2) organized and reviewed relevant prior academic research on food COO labeling over a twenty year period (i.e., 1990 to 2010), 3) analyzed the state of our current knowledge in this area, and 4) discussed the potential implications of this recent COOL legislation for both consumers and practitioners.

Based on the reviewed literature, we conclude that little generalizable knowledge about COO food labeling effects exists. This can be largely contributed to insufficient theoretical application and development in the testing of COO effects across a variety of different contexts and disciplines. As a result, the exact impact of mandatory (and voluntary) COO labeling initiatives still remains unclear and highly debatable. Thus, as these initiatives continue to increase the prevalence and importance of country-of-origin labeling around the world, it is critical that additional theory-driven, macromarketing research be conducted to foster more generalizable knowledge about the complex role of COO information in aggregate food marketing systems.

The present research has several limitations. First, the review examined COOL only in the domain of food and was thus context-specific. Therefore, it is important for future COO research to be conducted in additional domains so that the generalizability of results across different contexts can be better determined. Also, the scope of the analysis was limited to a certain time period (1990 to 2010), and for the sake of consistency did not analyze studies of transnational, regional, or local food labeling. Future research should assess if and how origin information that varies in scope leads to different outcomes, especially considering that some origin designations such as “local” are often subjective and open to interpretation. Further, consistent with the vast majority of existing COOL reviews, this review was qualitative in nature. As such, a quantitative meta-analysis of COO food labeling studies would certainly provide additional, valuable insight into the effects of COO information. This would also allow for the empirical testing of more holistic models that simultaneously incorporate both micro and macro-level factors. Such models should also incorporate factors related to the State and its institutions to more fully account for the effects of COOL. Additionally, this research provides only a factual historical analysis of relevant prior U.S. and E.U. legislation. Future research that takes more of a socio-historical approach to reviewing the existing COOL literature and understanding its impact would offer richer, important insight to understanding the impact of COOL on food marketing systems. Lastly, additional research should be conducted to see if the effects of COOL are more or less prominent in certain food categories than others (e.g., meat vs. fruits or vegetables). Such an approach may provide important insight into consumer responsiveness to COOL initiatives.

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