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Eyes Wide Shut? Understanding and Managing Consumers' Visual Processing of Country-of-Origin Cues

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In the context of the on-going debate regarding the relevance of the country of origin (COO) phenomenon and drawing from cue utilization theory as well as research on visual attention, we conduct three eye-tracking experiments that investigate (a) whether consumers naturally detect COO labels, (b) whether such detection influences subsequent behavioural intentions and (c) whether visual attention to COO labels can be externally motivated. Results consistently show that the majority of COO labels on product packages are indeed noticed by consumers. While the effects of COO on behavioural intentions are conditional on the duration of visual attention, dwell times on COO labels, on average, exceed the tipping point necessary to allow such effects. Importantly, whether and for how long COO labels are attended to can be motivated by differentially priming consumers' competence (vs. warmth)-based judgment goals. Implications of these findings for levering COO cues in marketing strategies are considered.

Introduction

In August 2017, Germany celebrated a unique anniversary: the 130th birthday of the 'Made in Germany' label. Although originally introduced by the British to stigmatize imitation products from Germany (Rayasam, 2013), companies have been using 'Made in Germany' labels as an indication of good workmanship and reliability when promoting their products and services. Underlying such practices is the fundamental notion that individuals carry stereotypical beliefs about the (manufacturing) abilities of Germany and its people, and they subsequently apply such beliefs to their evaluations of products or brands that originate from Germany. Such effects of the country-of-origin (COO) of a product or brand on consumer decision-making are well documented in the literature, typically portraying a significant influence of COO information on consumers' product evaluations and purchase intentions (for a relevant review, see Maheswaran and Chen, 2009). Indeed, in the last four decades, some 600 peer-reviewed articles have appeared on the topic (Lu *et al.*, 2016), making the COO construct '"the" or "one of

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the most" researched in international marketing' (Papadopoulos *et al*., 2011, p. 88).

The past 10 years, however, have been marked by several lively debates regarding the theoretical utility and practical relevance of the COO construct (see Samiee, 2010 vs. Zeugner-Roth and Diamantopoulos, 2010; Samiee, 2011 vs. Magnusson, Westjohn and Zdravkovic, 2011; Usunier, 2006 vs. Josiassen and Harzing, 2008). Central to these debates is whether COO information is, in reality, utilized in consumers' decision-making processes, 'with some authors proclaiming that the COO construct has passed its "sell-by" date and others arguing that it is still relevant and useful' (Herz and Diamantopoulos, 2017, p. 53). Relying on conventional questioning approaches (e.g. standard surveys) to resolve this impasse has, unfortunately, been highly problematic because of (a) consumers' inability to accurately 'discern the sources of influences on their evaluative judgments' (Liu and Johnson, 2005, p. 87), (b) consumers' articulation problems (Herz and Diamantopoulos, 2013) and (c) consumers' frequent unwillingness to admit that COO impacts their purchase decisions (Herz and Diamantopoulos, 2017). The shortcomings associated with self-reports (e.g. respondents' lack of awareness, impression management, articulation problems; see Baumgartner and Weijters, 2019) often obscure true COO influences, leading to inconclusive findings and disorientating managerial decisions as to the instrumentality and effective use of COO-based business strategies. To overcome this problem, researchers have been repeatedly encouraged to apply alternative methodological approaches that enable studying the impact of COO cues in an unobtrusive and inconspicuous manner (Diamantopoulos *et al*., 2017; Samiee and Leonidou, 2011).

To this end, we draw from cue utilization theory (Jacoby, Olson and Haddock, 1971) and visual attention theory (Krajbich *et al*., 2012) and conduct three eye-tracking studies that address the following questions: (a) Do COO cues generally get detected by consumers in unprompted exposures? (b) If detected, are they diagnostic enough to warrant further visual processing and predict behavioural intentions? (c) Under what conditions can detection and processing of COO cues be encouraged? Eye-tracking methods enable capturing attention to visual cues without 'forcing' respondents to use, or even consider, such cues (Pieters and Wedel, 2012). Importantly, eye movements implicitly reveal the diagnostic value of the various cues during the decision-making process (Orquin and Mueller-Loose, 2013) and thus can identify the 'true' (ir)relevance of COO information on consumers' evaluations.

In line with recent recommendations promoting the application of experimental methods in international business research (Zellmer-Bruhn, Caligiuri and Thomas, 2016) as well as the use of implicit measurement techniques in COO investigations (Diamantopoulos *et al*., 2017), our studies draw on eye-tracking data in a series of randomized, repeated trial experiments using multiple exposures (with and without COO information) offering 'hard' evidence regarding the relevance of COO information under conservative and inconspicuous exposure settings. Our findings show that the vast majority of COO cues are intuitively visually detected by consumers. While detection is a necessary but not sufficient condition for COO utilization, we find that the amount of time consumers invest in COO cues is, on average, sufficient to predict subsequent product preferences. Importantly, we show that the visual detection and processing duration of COO cues is contingent on the configuration of the decision-making context and can be externally motivated by differentially priming the focus of consumers' processing goals, namely competence vs. warmth judgment goals. These findings imply that managers have the ability to encourage such attentional resources and offer important insights for developing tactics to motivate visual processing of COO information, while also raising caution regarding factors that might undermine the potential activation of COO effects.

Theoretical development

COO cue utilization and visual attention

According to cue utilization theory (Jacoby, Olson and Haddock, 1971), consumers draw on various intrinsic (e.g. ingredients, material, technical features) and extrinsic cues (e.g. brand name, packaging design, COO) as surrogates of product quality. Particularly in the absence of predetermined attitudes due to lack of prior experience with a brand, extrinsic cues become the main source of consumers' product judgments (Tse and Gorn, 1993). What is more, visual attention theories (Krajbich *et al*., 2012) suggest that when

the product's desirability is not established, individuals are strongly affected by information they simply happen to attend to in a given exposure (Florack, Egger and Hübner, 2020). Thus, despite their potential diagnostic value, extrinsic product attributes do not have a *fixed* influence on decisions when no predetermined preferences exist. Rather, their impact depends on whether the information is attended to and how relevant it is perceived to be (Krajbich *et al*., 2012). This implies that detection of COO cues may occur at any time, or even not at all, during the decision-making process. Nevertheless, research on social cognition suggests that certain types of information have a priority in people's perceptual functions. More specifically, in order to economize on mental resources and cope with cognitive load, the human brain is hardwired to taxonomically classify the world around us into categories (Fiske, 2000) and, by doing so, it gets trained to identify cues that enable such categorizations (Fiske and Neuberg, 1990). This is an important adaptive process of the mind that influences judgment formation and is extremely rapid (Stroessner, 1996). The identification of ethnicity or national origin belongs to the fundamental forms of categorization and is both socially salient and profound (Halkias and Diamantopoulos, 2020). In line with Fiske (2000), people learn to detect others' sex, age and ethnicity within milliseconds in their effort to make prompt initial classifications between ingroup and outgroup members; an important distinction in social perception. Hence, through the process of socialization, individuals naturally develop predispositions towards identifying such categorization-relevant cues. Importantly, these mental classifications apply not only to people, but also to every attitude object for which category membership can be established, such as products (Halkias and Diamantopoulos, 2020; Phalet and Poppe, 1997); this is essentially the fundamental premise underlying COO as a field of study. In the current context, this implies that consumers will be intuitively equipped to spot the national origin of stimulus products and, thus, more likely than not to detect COO-based cues in unprompted product encounters.

H1: During unprompted product exposures, consumers will, on average, detect the majority of COO cues.

Simply detecting a COO cue does not necessarily mean that this is going to be processed further, let alone influence consumers' subsequent responses. The extent to which a certain cue will actually be utilized in decision-making depends on its diagnosticity, that is, its perceived strength in signalling quality (Purohit and Srivastava, 2001). Consistent with cue utilization theory, some cues will be more diagnostic and, consequently, more influential compared to less informative and/or ambiguous cues (Birnbaum, 1972; Florack *et al*., 2021; Nisbett, Zukier and Lemley, 1981; Wyer and Watson, 1969). Highly diagnostic information is 'more salient and more compelling to a perceiver, whereas less diagnostic information is less suggestive' (Skowronski and Carlston, 1987, p. 690). This implies that diagnostic cues, such as the COO (Teas and Agarwal, 2000), should be sufficient to influence judgments about a certain product, independent of the other information available. In this context, consumers who visually detect a COO cue will naturally invest further attentional resources, unless they see no diagnosticity in it. This proposition is consistent with visual attention research indicating that the desirability of a product is hardly evidenced by very brief eye fixations (Pieters and Wedel, 2012; Satomura, Wedel and Pieters, 2014). Thus, COO cues need to be attended to for a minimum amount of time, so that their diagnosticity can be apprehended and potential COO effects (e.g. impact on purchase intentions) can occur. This suggests that an expectation of monotonicity is not warranted with respect to COO influences on product preferences. Instead, such influences are expected to be conditional on exceeding a minimum attention time below which no COO effects are expected to occur. In other words, dwell time does not have an impact on whether COO effects materialize unless a minimum time threshold is exceeded.

H2: During unprompted product exposures, COO influence on product preferences will materialize only after a certain attention time threshold is exceeded.

An important issue in relation to H2 concerns the specification of the precise threshold (i.e. the 'tipping point'). Extant COO literature is not informative on this issue due to the complete absence of visual attention studies in the field. However, visual attention research offers concrete guidelines

that are applicable to the processing of COO labels (which is the most common format for communicating products' origin in real life). Specifically, research on how textual information is processed reveals an average fixation time of 200–250 ms when reading 17 to 19 characters of text (Rayner, 2009). The vast majority of COO labels fall within this range, implying that 200–250 ms is a bare minimum for consumers to simply *read* the label. Bearing this in mind, no COO effects can reasonably be expected to occur below this minimum fixation time, implying that the actual tipping point most likely lies well above this level.

Motivating COO cue detection and visual processing

Given the importance of visual attention for COO utilization, a crucial question is whether such attention is a function of individuals' idiosyncrasies only, or whether it can also be externally primed/encouraged. Eye-tracking research suggests that activated goals can completely change viewing patterns and direct attention to those elements seen as most relevant for the situation at hand (Pieters and Wedel, 2012; Rayner, Miller and Rotello, 2008). We argue that different product evaluation goals will affect the perceived salience of COO cues and, in turn, influence the likelihood of attending to them.

Marketing literature traditionally views consumers' decisions as being primarily driven by performance-related goals. However, consumers often base their decisions on aspects other than a product's quality or functionality (Aggarwal and McGill, 2007). For instance, consumers frequently judge products on the basis of human-like attributes such as 'friendliness' or 'sincerity' (Fournier and Alvarez, 2012). Indeed, these two consumer orientations are also reflected in the key managerial task of deciding whether a business should primarily focus on a product-based advantage or a relational advantage (O'Cass and Ngo, 2011). Importantly, the different kinds of goals are closely aligned with the two fundamental dimensions of perception: *warmth* and *competence* (Fiske *et al*., 2002). Warmth taps into relational aspects and can be reflected in the perceived friendliness and good-naturedness of a given stimulus, whereas competence draws on the notion of ability and reflects properties such as efficiency and capability (Fiske *et al*., 2002). This distinction is fundamental in social cognition and has been shown not only to influence managerial decision-making regarding recruitments, promotions and other job-related perceptions (e.g. Krings, Sczesny and Kluge, 2011; Shiu, Hassan and Parry, 2015), but also to guide individuals' impressions of inanimate entities such as products and brands (Davvetas and Halkias, 2019; Halkias and Diamantopoulos, 2020).

When the consumer goal is to assess the more abstract dimension of product warmth, judgments are formed through a more holistic process, drawing on 'Gestalt' impressions rather than individuated assessments of discrete attributes (Pieters and Wedel, 2012). In contrast, when the goal is to assess product competence, a more piecemeal approach takes place, with the search process being primed towards focusing on distinct cues. The latter processing predisposition should render COO cues more likely to be detected. Moreover, given the well-established function of COO information as a proxy for quality and workmanship, it should render them more instrumental in relation to the activated goal. Thus, the goal of assessing product competence, as opposed to warmth, should motivate greater attention to COO cues and increase the time consumers invest in it.

H3: During unprompted product exposures, consumers will (a) detect a larger number of COO cues and (b) spend more time on COO cues when they judge product competence as opposed to warmth.

Study 1

Study 1 deals with whether consumers detect COO cues (see H1). Thirty-five participants (24 female, $M_{age} = 22.09$) participated in an eye-tracking experiment involving repeated trials per respondent (see the online Appendix for full details of the research design). The number of participants is comparable to that used in eye-tracking studies on consumer choice (Gidlöf *et al*., 2017) and, due to the within-subjects nature of the design (six products with COO information nested within 35 participants – see below), resulted in $n = 210$ observations. For all our studies, a priori statistical power analysis indicated that the sample sizes employed provide sufficient power ($\geq$80%) for a medium

effect size equivalent to d = 0.50 (see Cohen, 1988) and a Type I error rate of 5% (one-tailed).[1]

Stimuli

Each participant was exposed to a total of 16 products corresponding to fictitious brands from eight product categories (see Appendix A1). For three of the product categories (i.e. energy drinks, towels and toasters), the products also included 'Made in' labels indicating the product's COO. Thus, only six out of the 16 stimulus products included a COO label, while the majority had *no* COO information and served as 'filler' products. This helped avoid sensitizing respondents to the topic under study and enhanced external validity, since COO labelling is not necessarily mandatory. The products within each product category were similar in terms of colour, design and complexity. Product–COO label combinations were fully randomized across participants, thus neutralizing any systematic influence due to potential variations in country favourability. We opted for a verbal (textual) reference to the COO as opposed to pictorial elements (e.g. flag, colour combination, landmark) to avoid potential ambiguity and ensure correct origin recognition (Balabanis and Diamantopoulos, 2008). The used COO labels were small, simulating the presentation formats typically encountered in real shopping situations (see Appendix A2).

Procedure and measures

Study participants were seated in front of a computer screen and, after calibrating the eye-tracking device, were exposed to the 16 stimulus products. Each product was presented individually. Before each product exposure, a fixation cross appeared in the centre of the screen for 1,500 ms and was then replaced by the image of the product. Each product was presented against a white background for five seconds and was automatically followed by a request to respondents to indicate their product preference. The product preference measure was included to render the task pertinent to a purchase decision context as opposed to incidental browsing (see Figure 1 for an example trial).

Analysis and results

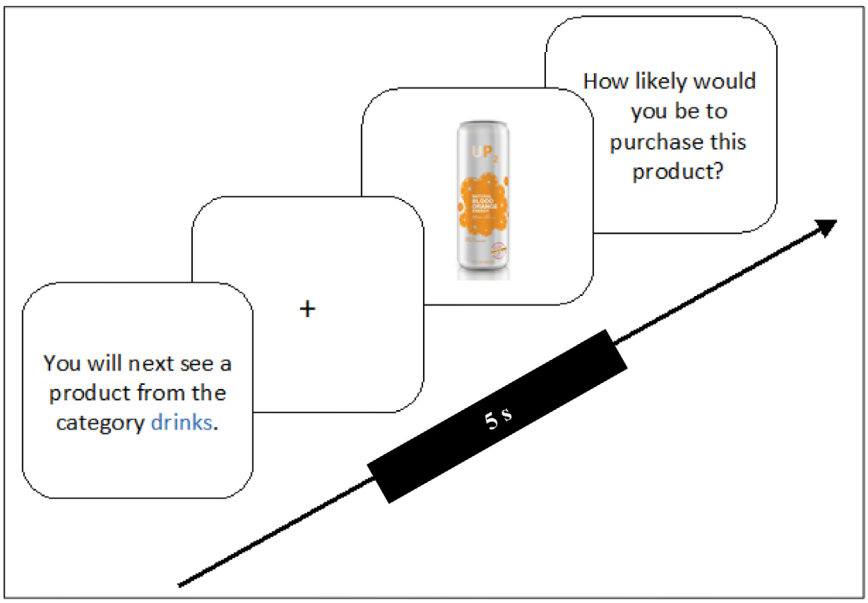
We analysed the eye-tracking data, focusing on the 'Made in' label as area of interest (AOI) with regard to (a) the time it took participants to look at the COO label for the *first* time (entry time in AOI) and (b) the overall likelihood that participants noticed a COO label (AOI hit). On average, it took participants 2,261.28 ms (SD = 594.91) to detect the 'Made in' label on the products. Individual hit ratios ranged from two to six, indicating that all participants noticed at least two of the presented COO labels, with the vast majority noticing either five or all six labels (Figure 2). Overall, and in support of H1, 81.43% of all 'Made in' label exposures were detected across the whole sample ($z = 9.10$, $p < 0.001$, against equal proportion). This translates to an average of 4.89 (out of six) 'Made in' labels being detected per participant ($t_3(34) = 9.86$, $p < 0.001$). A Wilcoxon signed-rank test showed that the observed distribution median (Md = 5) is significantly higher than 3, further corroborating that most participants detected most of the COO labels ($z = 4.91$, $p < 0.001$).

Study 2

Our second study aimed to replicate H1 but, most importantly, to examine whether COO information is relevant enough to influence purchase decisions (see H2). Unless consumers perceive the COO cue to be diagnostic for the desirability of a product, the amount of time they invest on attending to such cues should not predict subsequent purchase intentions.

We followed a similar procedure as in Study 1, but now selected countries differing sharply in terms of country image favourability – namely Switzerland and Romania, respectively ranked 3rd and 42nd in the Country Brand Index (FutureBrand, 2019). The two countries differ substantially across all economic and sociocultural characteristics contributing to a country's overall image (Eurostat, 2018), with the image of Switzerland being significantly more favourable than that of Romania. A COO effect would thus be manifest in higher purchase intentions for Swiss as opposed to Romanian products.

[1]For power analysis calculations, and depending on the underlying test, Cohen's d = 0.50 has been transformed into Cohen's f = 0.25 (conversion formula: f = d/2) or Pearson's r = 0.243 (conversion formula: $r = d/\sqrt{d^2 + 4}$) and, subsequently, Fisher's z =0.247 (conversion formula: z = 0.5 * (log(1 + r) − log(1 − r))).



Note. *Products were presented for 5 seconds each (see also Web Appendix).*

Figure 1. Example product presentation trial (Study 1) [Colour figure can be viewed at wileyonlinelibrary.com]
Note*: Products were presented for 5 s each (see also the Appendix).*

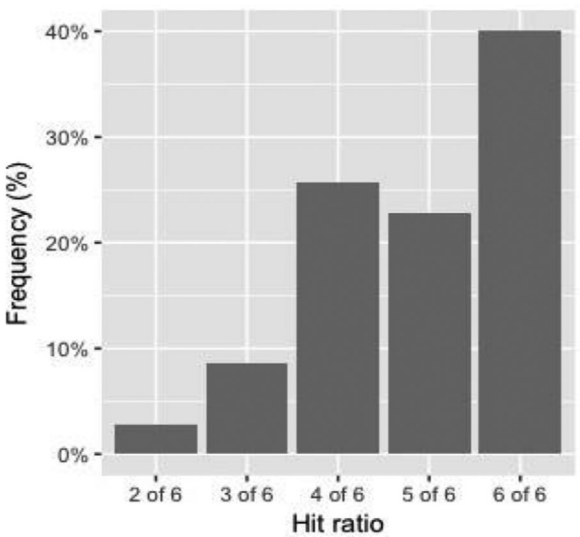


Figure 2. Frequency of COO label hit ratios (Study 1)

Fifty-three participants (38 female, M_{age} = 24.49) took part in a repeated-measures experiment where COO (Switzerland vs. Romania) was varied within participants. Due to the within-subjects design (six products with COO information nested within 53 participants), a sample of n = 318 observations was utilized (statistical power ≥ 0.80 to detect an effect size equivalent to f = 0.25 at the one-tailed, 5% significance level).

Stimuli

The experimental procedure and stimuli were the same as in Study 1, except that the six (out of 16) target products were now paired with either Switzerland or Romania. Products and labels were combined so that one product in a given category was designated '*Made in Romania*' and the other '*Made in Switzerland*'. Product–country combinations within product categories were randomized across participants to ensure that observed effects on purchase intentions could not be attributed to product-specific idiosyncrasies. As in Study 1, the majority of product exposures (i.e. 10 out of 16) for each participant consisted of filler products that did not contain any COO information.

Procedure and measures

The experimental procedure followed that of Study 1. However, after each product exposure, participants also indicated their purchase intention (1 = not at all likely, 7 = very likely) while – at the very end of the session – they also completed Roth and Romeo's (1992) four-item scale of

country image, which served as a manipulation check. Scale items assessed the perceived innovativeness, design, prestige and workmanship of the stimulus countries using a seven-point semantic differential format (e.g. 'How do you perceive the innovativeness of products that originate from Switzerland?'; 1 = very low, 7 = very high). Cronbach's α values were 0.79 for Romania and 0.75 for Switzerland.

Analysis and results

Respondents reported a significantly more favourable image of Switzerland (M = 5.87, SD = 0.81) than Romania (M = 2.71, SD = 1.01; t(52) = 16.75, p < 0.001), supporting the manipulation of country image. As in Study 1, we analysed the eye-tracking data in terms of (a) the time it took participants to look at the COO label for the *first* time (entry time in AOI), (b) the overall likelihood that participants noticed a COO label (AOI hit) and, in addition, (c) the *total time* participants spent gazing at the COO label (dwell time on the AOI) as a predictor of consumers' purchase intentions. Dwell time is defined as the sum of fixations and saccades in the AOI and is an established indicator of the amount of visual attention (Rosbergen, Pieters and Wedel, 1997). Because dwell times that fall outside the normal range of values may have a disproportionate influence on the outcome variable, in line with accepted practice, we excluded dwell time observations that were longer than 3.29 standard deviations above the mean (Tabachnick and Fidell, 2000). This was the case for only four out of 318 observations, leaving 314 observations for further analysis.

On average, it took participants 1,839.49 ms (SD = 683.70 ms) to notice the 'Made in' label on the products. Individual hit ratios ranged from one to six; most participants noticed at least four of the six 'Made in' labels. Overall, and further supporting H1, 66.98% of all 'Made in' exposures were detected across the entire sample (z = 5.80, p < 0.001, against equal proportion) corresponding to 4.02 (out of six) labels detected per participant ($t_3(52) = 4.75$, p < 0.001; Md = 4, Wilcoxon signed rank $Z_{\text{against } 3} = 4.17$, p < 0.001; see Figure 3).

To test H2, we took the multi-level structure of the data into account (i.e. multiple products from different categories and countries) and used dwell time as a predictor of purchase intentions. We computed a linear mixed-effects model (LMM)

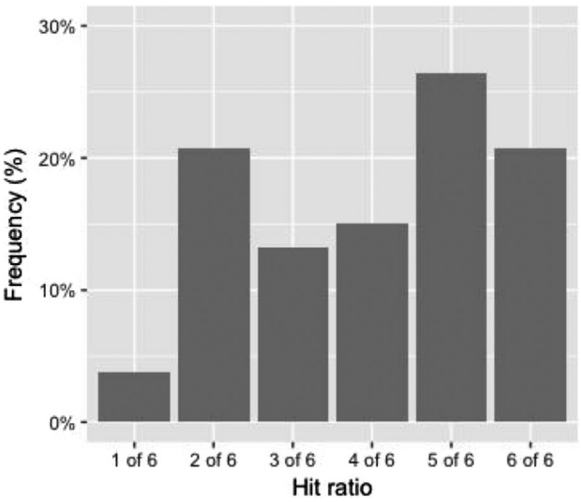


Figure 3. Frequency of COO label hit ratios (Study 2)

to estimate the effects of the COO (coded as −1 = Romania and 1 = Switzerland), dwell time and their interaction on purchase intentions using the lme4 package (Bates *et al.*, 2014) in R (Version 3.3.1). This allowed us to specify random intercepts at the subject *and* product category levels to account for differences due to subject and product category specificity (Pinheiro and Bates, 2000).

The results show that COO has a significant impact (b = 0.26, SE = 0.09, p = 0.006), indicating higher purchase intentions for Swiss (M = 4.16, SD = 1.88) than Romanian products (M = 3.66, SD = 1.83, p < 0.001). In line with H2, a significant interaction between COO and dwell time (b = 0.20, SE = 0.10, p = 0.040) revealed that the COO effect is a positive function of dwell time. There was no main effect of dwell time on consumers' purchase intentions (b = 0.16, SE = 0.10, p = 0.119).

To identify regions in the continuum of dwell time where the effect of the COO label on purchase intentions transitions from being nonsignificant to being significant, we applied the Johnson–Neyman approach. As Figure 4 shows, the conditional effect of COO on purchase intentions becomes and remains significant above the threshold of 356.44 ms (p = 0.05). As predicted by H2, differences between purchase intentions for Swiss and Romanian products become diagnostic only when the corresponding 'Made in' labels are looked at for a sufficient amount of time, with 356.44 ms being the tipping point. The latter is approximately 43% higher than the estimated bare minimum time needed to read the 'Made in' label. These results show that

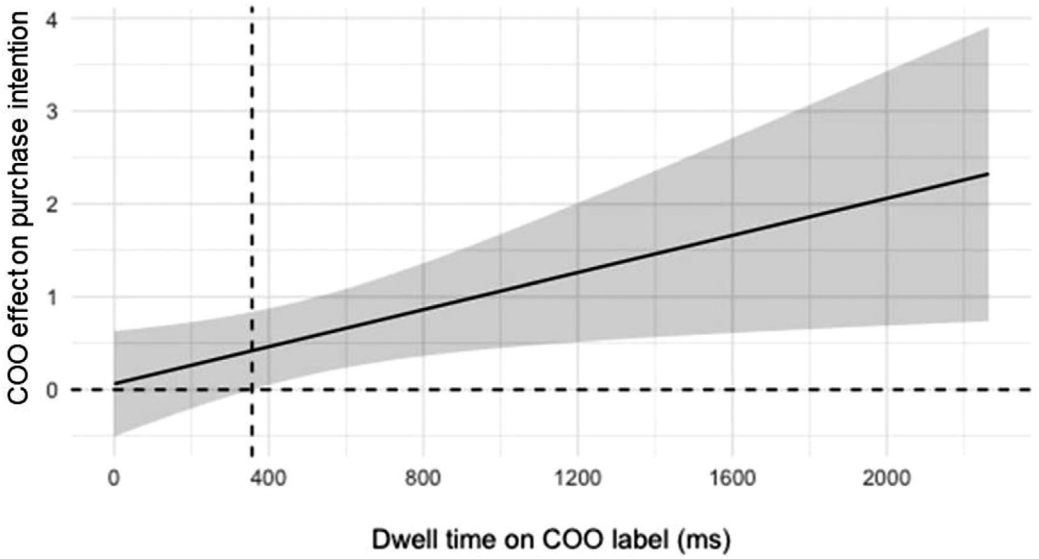


Figure 4. Conditional effect of COO on purchase intentions as a function of dwell time (Study 2)
Note*: The dashed vertical line indicates the Johnson–Neyman significance region starting at a dwell time of 356.44 ms. The grey area indicates the 95% confidence interval of COO effect.*

detecting a COO cue is a necessary but not sufficient condition for purchase intentions to be influenced by COO information. That said, the average dwell time across participants (M = 472 ms, SD = 493.83) is well above the observed tipping point, implying that consumers meaningfully draw on COO inferences.

Study 3

Having shown that COO influences are a function of visual attention, Study 3 sets out to identify conditions under which such attention can be encouraged. Specifically, we tested whether consumers attend more to COO cues and invest more time on them when competence, as opposed to warmth, judgment goals are activated (H3).

Fifty-six participants (41 female, M_{age} = 21.02) were randomly assigned to one of two between-subject conditions (warmth vs. competence judgment goals) and were asked to judge a total of 15 fictitious brands from different product categories. To further enhance generalizability, we employed an extended set of stimulus countries (six instead of two) and product categories (see Appendix A1). Six of the brands (i.e. energy drink, towel, toaster, notebook, radio and running shoes) also incorporated a 'Made in' label of the product's COO (i.e. Spain, Switzerland, France, Japan, Germany and Italy). Product–COO label combinations were fully randomized across participants, thus any potential influence attributed to differences in country favourability has been neutralized; the remaining nine products did not display any COO information and served as filler products. In total, n = 336 observations were recorded across participants (162 for warmth and 174 for competence), providing sufficient power (≥0.80) to detect an effect size equivalent to f = 0.25 (i.e. d = 0.50) at the one-tailed, 5% significance level.

Procedure and measures

The experimental procedure was similar to that of the previous studies, however, following Kervyn, Fiske and Malone (2012), we now manipulated participants' judgment goals prior to the product presentation trials. Specifically, participants were told that they would be judging a series of different products according to either their warmth or their competence. To this end, they were given a description of what a warm or competent product represents (e.g. 'Products are perceived differently by consumers. For instance, individuals might describe a product as competent (warm) if they consider it to be efficient (friendly)'). Each product exposure was followed by a request to judge the

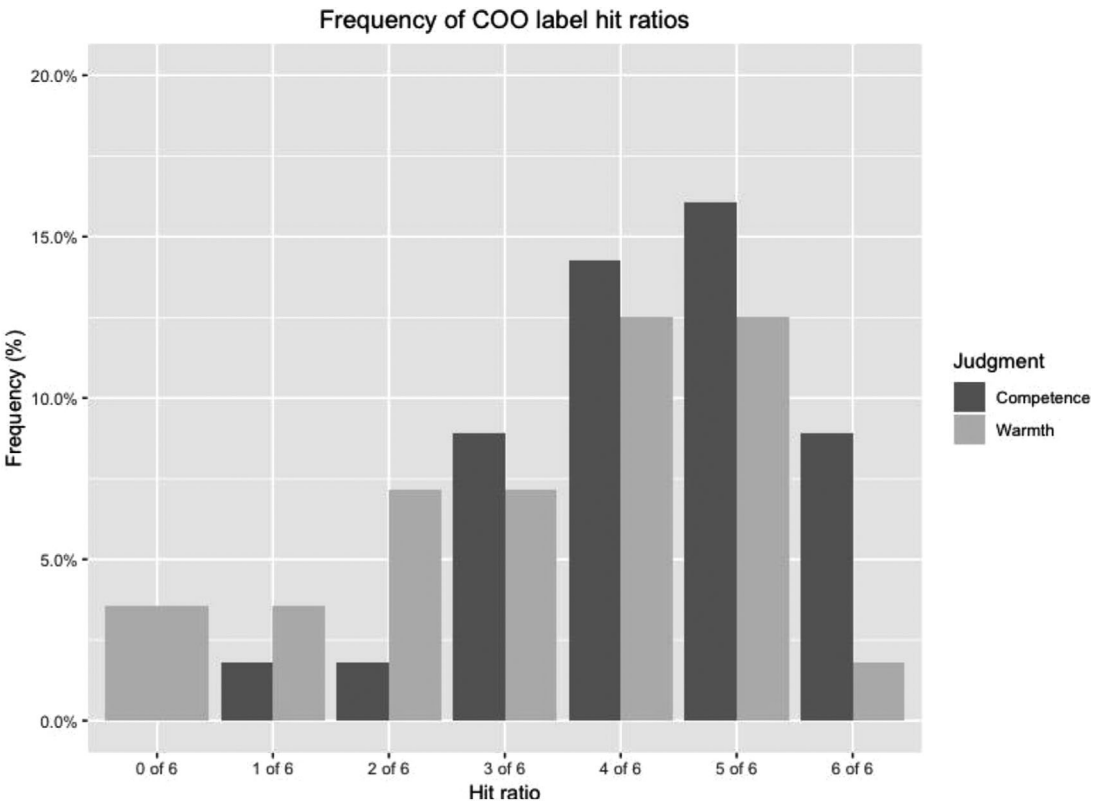


Figure 5. Frequency of COO label hit ratios under warmth and competence conditions (Study 3)

product according to its warmth or competence ('How warm/competent do you think this product is?'; 1 = not at all warm/competent, 7 = very warm/competent).

Analysis and results

Unlike in Study 2, dwell time now served as a dependent rather than a predictor variable. Thus, we tested its distribution for deviations from normality and observed significant positive skewness in the data ($D(336) = 0.188$, $p < 0.001$). Such skewness was driven by dwell time values of zero (i.e. when participants did not look at the COO label at all), which is a very common phenomenon in biometric gaze data. As in Study 2, we excluded dwell time values that were higher than 3.29 standard deviations above the mean (Tabachnick and Fidell, 2000). This applied to only three out of 336 observations.

On average, it took participants 1,995.90 ms (SD = 512.20) to notice the 'Made in' label. Consistent with H1 and in line with the results of the previous two studies, an overall detection rate of 64.29% across the whole sample was observed ($z = 5.20$, $p < 0.001$, against equal proportion), translating to 3.86 (out of six) 'Made in' labels detected per participant ($t_3(55) = 4.22$, $p < 0.001$; Md = 4, Wilcoxon signed rank $Z_{\text{against } 3} = 3.61$, $p < 0.001$). Supporting H3a, the percentage of 'Made in' labels detected varied across judgment goals, with significantly more COO labels being noticed under the competence (71.35%) vs. warmth (56.17%) condition ($z = 2.42$, $p = 0.016$; Figure 5).

In line with H3b, analysing dwell times with COO cue as the unit of analysis across the entire sample of observations revealed a significant difference between judgment goals for the duration of attention to 'Made in' labels, with longer dwell times in the competence as opposed to the warmth goal condition (M = 404.16 vs. M = 291.66, $t(331) = 2.92$, $p = 0.004$). To account for the observed skewness of the data, we further applied a compound Poisson generalized linear mixed model (CPGLMM) using the cplm package (Zhang, 2013) in R (Version 3.3.1), with the judgment goal as the predictor (coded as

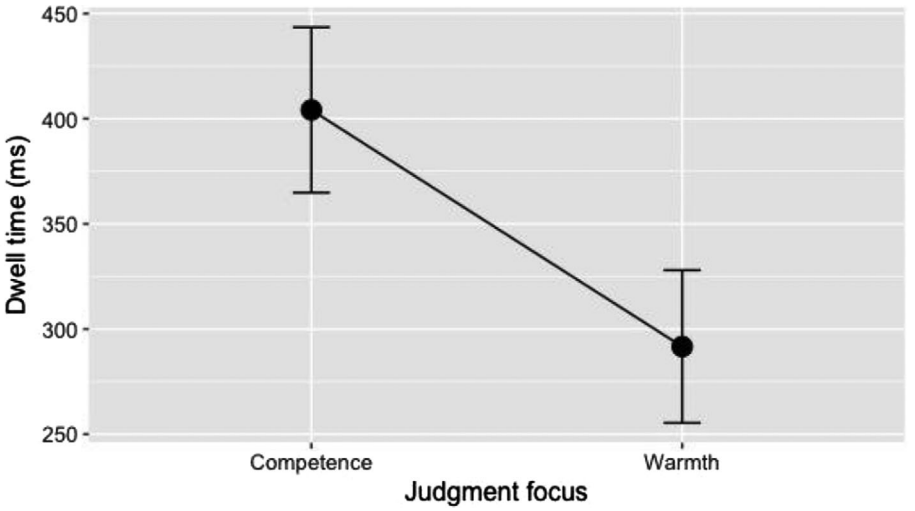


Figure 6. Mean dwell time in the warmth and competence conditions with 95% confident intervals (Study 3)

−1 = warmth, 1 = competence) and dwell time on the 'Made in' label as the dependent variable. This model assumes a continuous gamma distribution for dwell time and accounts for the non-occurrence of events (i.e. dwell time values of zero). Similar to Study 2, we specified random intercepts at the subject and product category level to account for any differences due to subject and category specificity. The results further corroborate H3b, showing that judgment goals influence the duration of attention to 'Made in' labels, with dwell time being significantly longer in the competence (vs. warmth) goal condition ($b = 0.17$, $SE = 0.07$, $p = 0.016$; Figure 6).

Overall, the results indicate that the likelihood of COO cue utilization increases when competence- rather than warmth-related judgment goals are activated.

Discussion

Researchers have been strongly encouraged to investigate the 'true' relevance of COO cues by using alternative methodological approaches and measures that are not prone to impression management biases and do not artificially inflate potential influences (Diamantopoulos *et al.*, 2017). The present paper blends cue utilization theory with visual attention theories and reports on three eye-tracking experiments that contribute to this direction. Our experimental setup (a) uses unknown brands to control for differences in prior brand knowledge and ensure that participants could not be pre-directed by other (uncontrolled) sources/notions of COO, (b) employs implicit measures of visual attention that avoid priming/sensitizing respondents to the focus of the study, (c) utilizes small and inconspicuous COO cues that simulate the presentation format typically encountered in real shopping situations and (d) involves multiple product exposures per participant (16 exposures), across eight different product categories, while using several 'filler' products (i.e. without 'Made in' labels) as distractors (10 out of 16 product exposures).

Theoretical and managerial implications

Do COO cues get detected?. All our studies consistently show that the majority of consumers do in fact notice COO cues on product packages. Indeed, across the three studies, between approximately 65% and 81% of all product exposures incorporating a 'Made in' label were, on average, detected by respondents. Importantly, as noted above, these results were obtained under 'conservative' research design conditions. Our findings thus demonstrate that COO information on product packages is not generally ignored or overlooked, but instead naturally breaks into consumers' perceptual space. Importantly, this occurs even if COO labels are not conspicuously displayed; subtle visual hints to the product's origin are sufficient to attract attention. Therefore, managers should

not be tempted to adopt extreme/exaggerated display formats of COO cues that might conflict with, and even dilute, the product's visual identity and aesthetics.

Does visual attention to COO cues predict behavioural intentions?. Once consumers have detected COO labels, they spend, on average, between 348 and 472 ms attending to them (across studies). These dwell times well exceed the average fixation time associated with the visual processing of comparable stimuli (200–250 ms; Rayner, 2009). Our results show that a minimum threshold of 356 ms needs to be reached for COO cues to significantly impact purchase intentions. Thus, there seems to be a time interval of approximately 100 ms during which the diagnosticity of the COO cue is established in consumers' minds. Thus, managers should be alerted to the fact that COO effects are likely to be manifested only after a minimum amount of visual processing has taken place. Simply incorporating COO information in product communications does *not* guarantee that COO will have an impact, even if such information is indeed noticed by consumers. The managerial challenge, therefore, lies in finding ways to actively encourage consumers to allocate sufficient attentional resources to COO cues.

Can visual attention to COO be externally motivated?. Study 3 demonstrates that attention to COO cues can be externally encouraged by priming competence-based judgment goals. The latter induce considerably higher COO cue detection rates as well as longer dwell times, thus increasing the likelihood that COO cues will impact purchase behaviour (Figure 7). Hence, COO effects are not only contingent on person-specific factors but also on the decision-making settings. This is particularly important for management practitioners and policy-makers, as empirical evidence from field studies indicates that comparable external priming techniques are both possible and effective in a real-world context (Berger and Fitzsimons, 2008). Our findings suggest that COO effects are more likely to be realized in decision contexts highlighting notions of efficiency and reliability than 'softer' notions of friendliness and sincerity (Kervyn, Fiske and Malone, 2012). This corroborates the idea that the traditional usage of COO information as a signal of quality has evolved into a decision heuristic that is strong enough to direct consumers' attentional resources during the decision-making

Figure 7. Heat map illustrating attention (averaged across participants) for one example product as a function of the warmth and competence goal priming (Study 3) [Colour figure can be viewed at wileyonlinelibrary.com]

process. Along these lines, relevant managerial strategies could employ executional elements in advertising, product package design and in-store banners to emphasize associations relating to the product's efficiency and performance (i.e. competence-based associations) as opposed to sincerity and friendliness (i.e. warmth-based associations). This resonates with empirical studies showing that individuals' actual behaviour in naturalistic settings can be significantly influenced by utilizing images, posters or other visual aids priming a particular notion, such as healthy consumption (Papies and Hamstra, 2010), cooperative behaviour (Bateson, Nettle and Roberts, 2006; Ernest-Jones, Nettle and Bateson, 2011) and eco-friendliness (Wang, Mukhopadhyay and Patrick, 2017). In addition, auditory promotional messages, typically employed in retailing environments, can utilize competence/warmth-based framing to further influence the likelihood that consumers will attend to COO product cues. Our findings suggest that such strategies are more appropriate for transitioning between merely noticing COO cues and unravelling their effects on purchase behaviour.

Limitations and future research directions

Our experiments employed multiple, yet sequential, exposures to product stimuli. In real life, however, several products might be considered

simultaneously or compared against each other when making purchase decisions. Similarly, informational overload and potential distractions might reduce the overall amount of attention to individual product features, rendering detection of COO cues less likely and/or limiting the processing duration of such cues. Therefore, future research should refine the current investigation by analysing how competing product exposures might influence visual attention patterns to specific product information, such as a COO label.

Moreover, our studies did not explicitly distinguish between different product types according to their hedonic vs. utilitarian nature (Melnyk, Klein and Völckner, 2012; see also Appendix A5). It might be that the latter inherently induces competence-driven evaluation goals and thus naturally provides a more effective platform for the implementation of COO-based strategies. To formally test this, researchers should juxtapose visual attention patterns regarding COO cues in explicitly balanced experimental conditions between hedonic and utilitarian products. The same thing applies to future studies examining relevant distinctions across other product types (e.g. durable vs. non-durable, low vs. high involvement).[2] Another interesting research question that naturally emerges in the present investigation refers to explicitly modelling several other visual product cues in an eye-tracking setting in order to explore the *relative* influence of COO cues. However, comparative studies focusing on the influence of COO vs. other possible cues require more complex designs, stimulus material, controls and exposure procedures to generate valid results.

While eye tracking is an established technique for capturing responses to visual stimuli (Pieters and Wedel, 2012; Rosbergen, Pieters and Wedel, 1997), it does so only from a cognitive perspective. Additional methodological approaches, such as facial expression analyses (Ekman, 1993) and measures of pupil size (Serfas, Büttner and Florack, 2016), can illuminate important affective aspects and thus provide a more nuanced understanding of COO cue utilization.

Finally, as with all experimental studies, and despite our concerted efforts to create an ecologically valid exposure setting, caution needs to be exercised regarding the generalizability of our findings. Arguably, in a real market environment there may be additional factors which may influence attention. For instance, brand logos, package design and colour, but also atmospherics, lighting conditions and other store elements may alter consumers' visual patterns and suppress or enhance attention to COO cues. Besides the influence of potential distractors mentioned above, the use of COO-related symbols (e.g. flags, landmarks, colour combinations) and auditory promotional messages/announcements – typically employed in retailing contexts – may actually boost COO cue detection rates. Future studies in more natural environments are necessary to paint a more conclusive picture of how COO cues are attended to and utilized by consumers when making purchase decisions.

[2]Consumers' product category involvement was used as a control variable in Study 1 and Study 2, yielding non-significant correlations (all $p > 0.15$), with both the entry time on the COO label *and* the number of label hits, and showing no association between involvement and attention to COO cues (the involvement variable was not included in Study 3). However, formal comparisons between product types, such as low- and high-involvement products, require specific pre-testing and several additional provisions with regard to the stimulus presentation format (e.g. text size, product size, position of COO label) to produce valid results.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

A1 List of product categories, country labels and measures analysed in Studies 1 to 3.
A2 Example target products used in the empirical studies. The position of the COO label is marked for illustration purposes. The red square was not presented to participants.
A3 Parameter estimates of the effect of country, dwell time and their interaction on purchase intentions (Study 2).
A4 Examination of order effects.
A5 Assessment of the hedonic/utilitarian nature of the products employed throughout the studies.