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Short Communication

## The hybrid enigma: The importance of self-construal for the effectiveness of communication messages promoting sustainable behaviour

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## ABSTRACT

Transition towards more sustainable diets is imminent and marketers are looking for guidance on type of the advertising appeal that could effectively persuade consumers to buy products that could support this transition, such as hybrid products. While prior research has investigated the value of self-interest/-transcendent goal appeals and independent/interdependent self-construal, only a small number of studies have investigated these factors in combination. Therefore, we conducted a representative cross-national study involving almost 2000 consumers from Denmark, Spain, and the UK, to experimentally investigate the effect of self-interest (health) vs. self-transcendent goal (environment) and independent vs. interdependent self-construal on consumers' attitudes. The results showed that perceived product quality mediates the effect of goals on consumers' product attitudes, such that messages focused on the environment are more effective when interdependent self-construal is activated, while messages leveraging on health are more effective when independent self-construal is activated. This research suggests that advertising efforts and communication campaigns that rely on consumers' goals should account for self-construal to induce higher levels of perceived product quality and efficiently boost consumers' product attitudes and purchase behaviour.

### 1. Introduction

The transition to sustainable food systems is imminent, as food production and consumption are chief drivers of environmental degradation and climate change (EC, 2020). Although consumers are pledging themselves to sustainability in existing research, they still tend to underestimate the environmental effect of their own consumption habits due to the lack of knowledge and information (BEUC, 2020; de Boer, Schösler, & Aiking, 2014). Improving public awareness and communication around sustainable products, represents an important task for producers, marketers and retailers.

The usual suspect in the transition towards more environmentally-friendly food system is the livestock sector often associated to detrimental environmental impacts (Pais, Marques, & Fuinhas, 2020) and mainly, meat consumption, linked to increased health risks (Yip, Lam, & Fielding, 2018). If 50% of the meat and dairy products, would be substituted with the plant-based sources, the environmental-relevant impacts and health-related risks could be prevented (Goldstein, Moses, Sammons, & Birkved, 2017). However, this transition will not transpire without a change in consumers' diets. Yet, although "meatless days" and

"less but better" are promised by consumers (de Boer et al., 2014), the increase in meat and dairy consumption is still witnessed (EC, 2020). Thus, call has been made for providing a wider range of environmentally-friendly products via improved information and communication towards promoting flexitarian (Spencer & Guinard, 2018) and sustainable diets (BEUC, 2020).

Recently, hybrid products, which blend plant-based ingredients and combine it with meat (Fortune, 2019) and dairy (Watson, 2020) have appeared on the market to answer the above challenges and allow for a smoother consumer transition. These products encourage consumers to eat more plant-based sources rather than having meatless and/or non-dairy diet and do so without much compromising on their established habits. Despite the obvious advantages that hybrid products can play in supporting sustainability objectives, there is still a gap in the research on how to increase awareness and communicate about these products. In the present research, we directed our contribution to above issues by investigating the effects of different types of messages on attitudes and purchase intentions towards hybrid products.

The communication strategies used to promote sustainable choices and focusing on the benefits of these practices have been extensively

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investigated by prior research (e.g., Evans et al., 2013; Jäger & Weber, 2020). Specifically, two main lines of enquiry can be broadly identified: one related to *self-interest* (e.g., health, economic reasons) and another related to *self-transcendent* (e.g., protecting the environment, benefitting the community) goals (De Dominicis, Schultz, & Bonaiuto, 2017; Lee & Pounders, 2019). However, while most studies seem to suggest that self-transcendent, pro-environmental claims are more effective to promote sustainable consumption and choices (Evans et al., 2013), the relevance of specific goals might be affected by individuals' *self-construal*, i.e. the way in which they see themselves and perceive the self in relation to others (Cross, Hardin, & Gercek-Swing, 2011; Lee & Pounders, 2019). Specifically, an *independent self-construal* puts more emphasis and leads to behaviours driven by personal goals and values, while an *interdependent self-construal* emphasizes on relatedness with others and on group-related goals and values (Markus and Kitayama 1991). This suggests that claims centered on self-interest (self-transcendent) goals such as health (environment) might be more effective when an independent (interdependent) self-construal is activated. At the same time, prior research has shown that goals affect consumers' perceptions of product quality (Jäger & Weber, 2020). Furthermore, perceptions of food quality are dependent on factors such as health or environmental impact of production (Aschemann-Witzel, 2015) pointing to the idea that communication messages leveraging on these factors might affect consumers' perceived product quality. Taken together, these findings suggest that that this factor might mediate the effect that goal framing and self-construal have on consumers' attitudes and purchase intentions.

## 2. Methodology

We experimentally investigate how messages focused on goals (self-interest vs. self-transcendent) and self-construal (independent vs. interdependent) affect consumers' attitudes towards a hybrid product. Specifically, we expect self-construal to moderate the effect of type of goal on both perceived product quality and attitude. Furthermore, we expect that the effect of type of goal and self-construal on attitude is mediated by consumers' perception of product quality. The overall conceptual framework of the study is presented in Fig. 1. We also test if above relationships could be extended to consumers' purchase intentions.

### 2.1. Pre-test of experimental stimuli

As a hybrid product we selected hybrid meat, specifically a 50% plant-based and 50% beef burger, with the aim of mirroring alternatives currently available on the selected markets (Fortune, 2019). We used a 2x2 between-subjects experimental design where we manipulated goal (self-interest/health vs. self-transcendent/environment) and self-construal (independent/yourself vs. interdependent/your family). Fig. 2 shows the resulting experimental conditions.

The experimental stimuli were pre-tested on a total of 121

participants. Respondents in each condition rated on 7-point scales what was the focus of motivation for consuming the product (1 = health; 7 = environment), and if while reading the message they focused on themselves or their family (1 = yourself; 7 = your family) (Lee & Pounders, 2019). The results showed that after being exposed to self-interest vs. self-transcendent content, as expected, participants in the health condition scored lower ( $M = 3.43$ ,  $SD = 1.77$ ) than participants in the environmental condition ( $M = 4.92$ ,  $SD = 1.54$ ;  $t(121) = 24.42$ ,  $p < .001$ ). Further, participants in the independent condition agreed that the message they read focuses on themselves ( $M = 2.57$ ,  $SD = 1.25$ ), while participants in the interdependent condition agreed that the message they read focused on their family ( $M = 3.82$ ,  $SD = 1.72$ ;  $t(121) = 22.60$ ,  $p < .001$ ), indicating that self-construal worked as intended.

### 2.2. Participants, procedure and measures

A total of 1958 consumers were recruited from Denmark ( $N = 640$ ;  $M_{age} = 41.8$ ; 55.8% female), Spain ( $N = 674$ ;  $M_{age} = 42$ ; 50.6% female), and the UK ( $N = 644$ ;  $M_{age} = 41.7$ ; 51.9% female). There were no significant differences in terms of age ( $p = .881$ ) and gender ( $p = .323$ ) across countries. After giving consent, participants were randomly assigned to one of the four experimental conditions previously pre-tested (Fig. 2), in which goal framing (self-interest vs. self-transcendent) and self-construal (independent vs. interdependent) were manipulated.

After being exposed to their assigned condition, participants rated perceived product quality on a 7 – point scale (Elder & Krishna, 2010; very poor quality/very good quality; very poor taste/very good taste; not at all delicious/very delicious;  $\alpha = 0.94$ ). Product attitudes were measured on a 7 – point scale (negative/positive; unfavorable/favourable; bad/good;  $\alpha = 0.96$ ), as well as participants' purchase intention (very unlikely/very likely to buy; very unwilling/very willing to buy; very uninclined/very inclined to buy;  $\alpha = 0.96$ ) (Kees, Burton, & Tangari, 2010). The same manipulation check measures as in a pretest were used. Finally, demographic information about age, and gender, was collected.

## 3. Results

### 3.1. Manipulation checks

One-way ANCOVAs, with experimental conditions (goal: self-interest vs. self-transcendence; self-construal: independent vs. interdependent) as the independent variables and country as the covariate, showed successful manipulation. Participants in the self-interest condition agreed that their stimulus focused on health ( $M = 3.42$ ,  $SD = 1.70$ ), while participants in the self-transcendent condition agreed that it focused on the environment ( $M = 4.67$ ,  $SD = 1.67$ ;  $F(1, 1957) = 268.32$ ,  $p < .001$ ). Similarly, participants in the independent condition ( $M = 3.37$ ,  $SD = 1.85$ ) rated message as independent (i.e. yourself), while

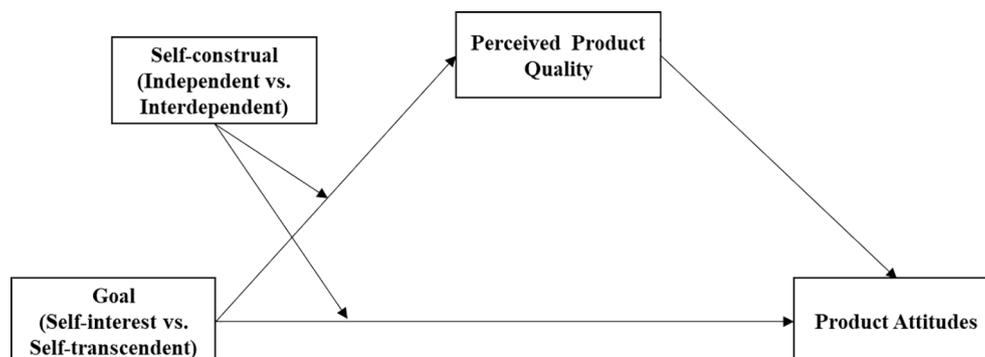


Fig. 1. Conceptual framework.

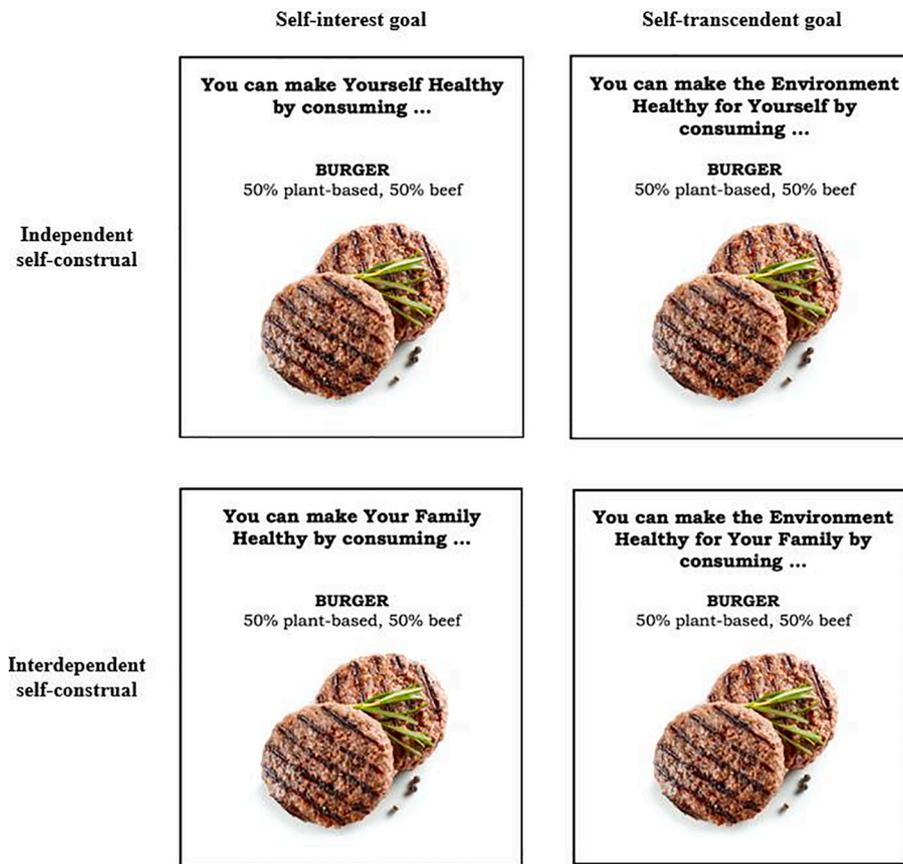


Fig. 2. Experimental conditions.

participants in the interdependent condition rated message as interdependent (i.e. your family) ( $M = 4.17, SD = 1.85; F(1, 1957) = 89.29, p = .044$ ). The covariate was non-significant in both analyses, while the effects were significant across all countries ( $p_s < 0.001$ ).

3.2. Effect of goal and self-construal on perceived product quality

To determine whether experimental conditions influenced participants' perceived product quality, we conducted a new ANCOVA, with country as the covariate. As summarized in Table 1, the results showed a significant direct effect of goal condition on perceived product quality, where participants in the self-transcendent (environment) condition reported higher perceived product quality than participants in the self-

Table 1

Direct effects, interaction effect, and planned contrasts of goal and self-construal on perceived product quality.

Measures	M	SD	DF	F- test	p-value
<i>Direct effects</i>					
<i>Goal</i>					
Self-interest	4.86	1.22	1,1957	45.36	< 0.001
Self-transcendent	5.22	1.42			
<i>Self-construal</i>					
Independent	5.14	1.42	1,1957	12.61	< 0.001
Interdependent	4.95	1.23			
<i>Interaction effect</i>					
Goal × Self-construal			1,1953	164.64	< 0.001
<i>Planned contrasts</i>					
<i>Self-transcendent goal</i>					
Independent self-construal	4.97	1.57	1,927	242.83	< 0.001
Interdependent self-construal	5.51	1.14			
<i>Self-interest goal</i>					
Independent self-construal	5.33	1.19	1,1025	15.87	< 0.001
Interdependent self-construal	4.39	1.05			

interest (health) one. The direct effect of self-construal was also significant, with participants in the independent condition reporting higher perceived product quality than participants in the interdependent condition.

As presumed, the goal × self-construal interaction was also significant, indicating that self-transcendent (environment) goal had the highest effect on perceived product quality when interdependent self-construal involved, and the reverse was true for self-interest (health) goal and independent self-construal. Covariate was significant ( $F(1, 1957) = 25.32, p < .001$ ), where the highest interaction effect of self-transcendent (environment) goal and interdependent self-construal was observed in Spain ( $M = 5.82, SD = 1.04, F(1, 673) = 73.75, p < .001$ ), and lowest in Denmark ( $M = 5.20, SD = 1.15, F(1, 639) = 32.88, p < .001$ ). It should be noted that this interaction had the most favourable influence on perceived product quality across all countries.

3.3. Goal and self-construal effects on product attitudes

As shown in Table 2, a similar analysis on product attitudes demonstrated a significant direct effect of goal and self-construal, as well as their interaction. In line with above, participants in the self-transcendent (environment) condition reported significantly more favourable product attitudes than participants in the self-interest (health) condition. Further, participants in the independent condition showed more promising product attitudes than participants in the interdependent condition. In terms of the joint effect, the higher increase in participants' product attitudes was observed when self-transcendent (environment) goal matched with interdependent self-construal, while the lowest increase was observed when self-transcendent (environment) goal matched with independent self-construal.

The influence of country was significant ( $F(1, 1957) = 22.53, p < .001$ ) with the self-transcendent goal and interdependent self-construal

**Table 2**  
Direct effects, interaction effect, and planned contrasts of goal and self-construal on product attitudes.

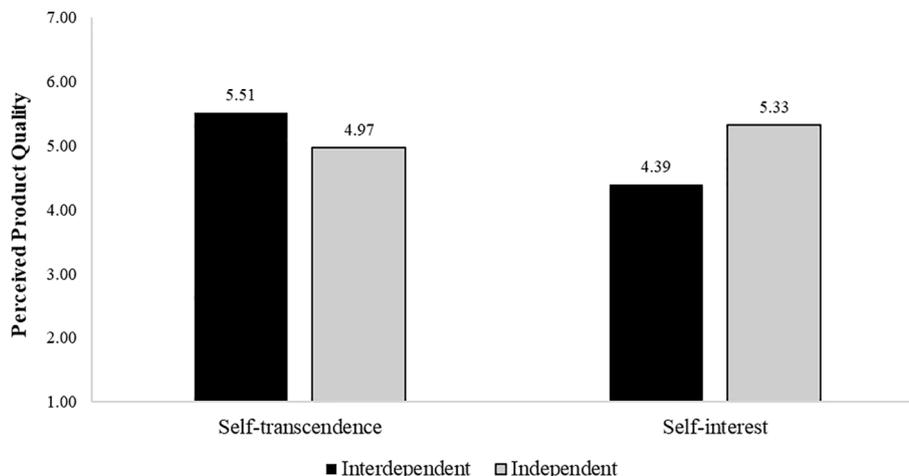
Measures	M	SD	DF	F- test	p-value
<i>Direct effects</i>					
<i>Goal</i>					
Self-interest	4.87	1.28	1,1957	38.58	< 0.001
Self-transcendent	5.22	1.60			
<i>Self-construal</i>					
Independent	5.15	1.59	1,1957	13.62	< 0.001
Interdependent	4.94	1.30			
<i>Interaction effect</i>					
Goal × Self-construal			1,1953	235.31	< 0.001
<i>Planned contrasts</i>					
<i>Self-transcendent goal</i>					
Independent self-construal	4.89	1.84	1,927	333.15	< 0.001
Interdependent self-construal	5.62	1.15			
<i>Self-interest goal</i>					
Independent self-construal	5.46	1.18	1,1025	33.61	< 0.001
Interdependent self-construal	4.28	1.09			

condition more favourably affecting the participants' product attitudes. Considering this experimental condition, again, Spanish participants showed more positive attitudes ( $M = 5.92, SD = 1.02, F(1, 673) = 81.66, p < .001$ ), when compared to UK ( $M = 5.64, SD = 1.15, F(1, 643) = 84.33, p < .001$ ), and Danish participants ( $M = 5.21, SD = 1.17, F(1, 639) = 69.17, p < .001$ ).

**3.4. Moderated mediation of self-transcendence and self-interest on product attitudes**

To investigate whether the effect of experimental conditions on product attitudes would be mediated by participants' perceived product quality and moderated by their level of self-construal (Fig. 1) we conducted a moderated mediation analysis (PROCESS Model 8; Hayes, 2017). Experimental goal condition (self-transcendence = 0, self-interest = 1) was the predictor, participants' perceived product quality was the mediator, self-construal (interdependent = 0, independent = 1) served as moderator, while product attitudes acted as the outcome variable. In line with above analyses, we included country as a covariate.

Consistent with the ANCOVAs results, the interaction effect of goal and self-construal experimental conditions on participants' perceived product quality was significant ( $b = 1.47, t = 12.83, p < .001$ ). Specifically, participants assigned to the self-transcendent conditions reported higher perceived product quality when self-construal was interdependent than independent, while the reverse was true for participants assigned to the self-interest conditions. The results are summarized in Fig. 3.



**Fig. 3.** Interaction effect of goal and self-construal on perceived product quality.

Furthermore, participants' perceived product quality was significantly affecting their product attitudes ( $b = 0.83, t = 52.60, p < .001$ ). The effect of goal was also significant ( $b = 0.21, t = 1.41, p = .160$ ), indicating that perceived product quality partially mediated the effect of goal on product attitudes. The interaction effect of goal and self-construal on product attitudes was also significant ( $b = 0.68, t = 8.23, p < .001$ ). Specifically, when the goal is self-transcendent (self-interest) the product attitudes are higher when interdependent (independent) self-construal is activated as shown in Fig. 4.

The index of moderated mediation was significant for self-construal (Index: 1.21, 95% CI = [1.03, 1.41]), supporting our moderated mediation account. The conditional indirect effects of goal on attitudes through perceived product quality were significant for both participants in the interdependent (95% CI = [-0.105, -0.80]) and independent conditions (95% CI = [0.15, 0.43]), with this effect being greater for participants in the independent self-construal conditions ( $b = 0.29$ ) than for participants in the interdependent self-construal conditions ( $b = -0.93$ ). Country as a covariate was not significant ( $b = 0.03, t = 1.38, p = .168$ ). Finally, the interaction effect of goal and self-construal on product attitudes was positive and significant ( $b = 0.68, t = 8.23, p < .001$ ).

**3.5. Moderated mediation of self-transcendence and self-interest on product purchase intention**

In order to examine whether our results could be further generalized to other strategic consumer outcomes, and in a view of the fact that perceived product quality plays an important role in explaining consumer purchase intentions (e.g., Jäger & Weber, 2020), we investigated whether the above moderated mediation results could be extended to product purchase intention. If confirmed, such a moderated mediation result would indicate that our manipulation not only has an effect on product attitudes, by means of perceived product quality, but would also demonstrate consistent downstream influence on purchase intentions. Therefore, we conducted additional moderated mediation analysis, where we used purchase intentions as outcome variable. The results indicated that the moderated mediation effect was significant for self-construal (Index: 1.35, 95% CI = [1.15, 1.56]). As expected, perceived product quality was significantly related with product purchase intentions ( $b = 0.92, t = 47.14, p < .001$ ).

**4. Discussion**

The present study shows that the effectiveness of communication messages aimed at promoting the consumption of hybrid products depend on both type of goal (self-transcendent vs. self-interest) and self-construal (independent vs. interdependent). Specifically, we provide

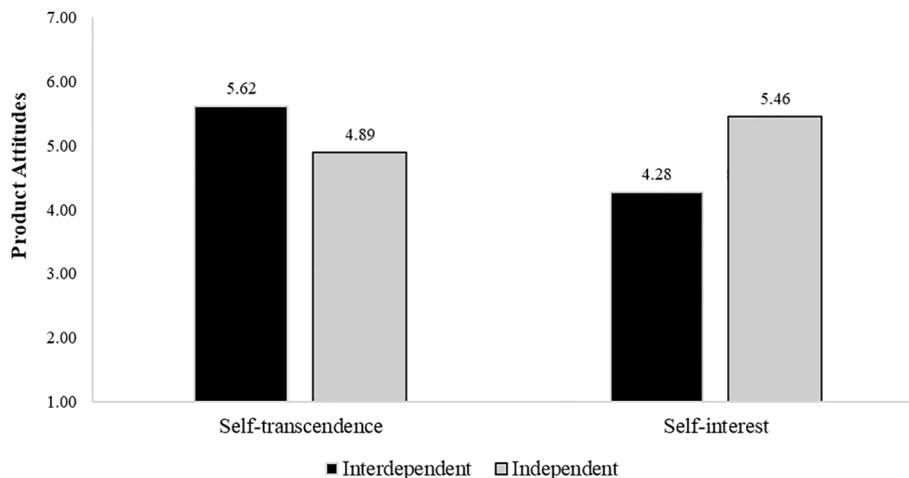


Fig. 4. Interaction effect of goal and self-construal on product attitudes.

evidence that messages eliciting self-transcendent goals (e.g., protection of the environment) are more effective when an interdependent (i.e., focus on your family) self-construal is activated, while messages eliciting self-interest goals (e.g., health benefits) are more effective when an independent self-construal is activated (i.e., focus on yourself). In this sense, our results contribute to clarify findings from prior research about the persuasiveness of message appeals focused on self-interest and self-transcendent goals when promoting sustainable choices (De Dominicis et al., 2017; Evans et al., 2013). From a practical point of view, this suggests the need for marketers and policy makers to develop congruent messages leveraging on both goals and self-construal when developing communications campaigns. This is particularly relevant as our results show that these factors have an effect on consumers' attitude mediated by *perceived product quality*, in line with prior research showing that the hedonic characteristics of hybrid products are of primary importance for consumers' acceptance (Spencer & Guinard, 2018).

Furthermore, by testing the effect of message appeals across three European countries (Denmark, Spain, UK) we provide evidence for the robustness of our results. Consequently, this study has broad implications and offers useful insights for both the consolidation of existing markets and the success of hybrid products in new markets as findings are confirmed in countries in which hybrid products are currently available (Denmark, UK) (Fortune, 2019; White, 2019) and in those in which they are yet to be launched (Spain).

#### 4.1. Limitations and future research

A potential limitation of our work is the use of a specific category of products - i.e., hybrid meat - which could limit the generalizability of our findings. Future research could explore the role of goals and self-construal on consumers' perceptions of product quality and attitude for other categories of hybrid products that are currently being launched on European markets (e.g., hybrid dairy, Watson, 2020). Along these lines, the effectiveness of communication messages for hybrid products could be further investigated through sensory trials where one could ascertain if the influence of the message could still linger in the experience phase and increase perceived product quality and acceptance. Nevertheless, while our results rely on self-reported measures, our work still advances knowledge of consumers' reactions to communication messages promoting hybrid products and provides first evidence and guidelines for future research and practice.

#### 5. Conclusion

Our results suggest that reliance on advertising efforts and communication campaigns that rely on environmental (health) and

interdependent (independent) appeals that can at the same time induce higher levels of perceived product quality appears to efficiently boost consumers' product attitudes, and have a potential downstream effect on purchase behaviour. From a managerial and policy perspective, this study shows that communication efforts promoting the consumption of hybrid products should be tailored by accounting simultaneously for consumers' goals and self-construal.

#### CRedit authorship contribution statement

**Marija Banovic:** Conceptualization, Methodology, Investigation, Formal analysis, Writing - review & editing, Funding acquisition. **Ada Maria Barone:** Conceptualization, Methodology, Investigation, Formal analysis, Writing - review & editing.

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