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**PRODUCT EVALUATIONS AS A FACTOR OF UNKNOWN  
ATTRIBUTE POSITIONING, BRAND TRUST, NEED FOR COGNITION  
AND MESSAGE DIAGNOSTICITY**

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PRODUCT EVALUATIONS AS A FACTOR OF UNKNOWN  
ATTRIBUTE POSITIONING, BRAND TRUST, NEED FOR  
COGNITION AND MESSAGE DIAGNOSTICITY

BY

AHMET M. HATTAT

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## **ABSTRACT**

This research investigates how consumer evaluations are shaped towards products that highlight either presence or absence of attributes that are unknown to consumers. Participants were recruited through Amazon Mechanical Turk online panel and randomly assigned to a variety of experimental conditions in four studies. Results of Study 1 show that, under the low brand trust condition, consumers have more positive evaluations of products with absence positioning than presence positioning. Study 1 results also show that under the high brand trust condition, the disjunctive gap between the absence versus presence positioning closes. In Study 2, these results are extended by utilizing a product from another category to investigate the process variable in the previously observed effect. Results of Study 2 show perceived risk to be a mediator in a moderated mediation model, such that, the indirect effect of ingredient positioning through perceived risk was significant when brand trust was low but not significant when brand trust was high. In Study 3, these results are advanced by investigating the probable interactions between ingredient positioning, brand trust and need for cognition (NFC). As an additional finding, Study 3 results identifies a two-way interaction between ingredient positioning and NFC. In the final study, diagnosticity level of the main message is operationalized as an additional variable, generating a three-way interaction between unknown ingredient positioning, NFC and message diagnosticity. This dissertation makes significant contributions to research on attribute positioning, risk perception, need for cognition and message diagnosticity. It provides important managerial implications as well.

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## CHAPTER 1: INTRODUCTION

How would you like some dihydrogen oxide in your fruit juice? Even though you might have no information about dihydrogen oxide (actually it translates into water), as it sounds chemical, you could quickly classify it as unappealing. What if, instead of a chemical sounding ingredient, you read on the front-of-package that your fruit juice includes “rilol” as a main ingredient. In that case, you could feel more clueless about that ingredient as it is actually a totally made-up word. How would you evaluate rilol as a main ingredient if its presence or absence in a product is particularly emphasized on the package?

An integral part of consumers’ product evaluation process is influenced by the content of the product. For example, 2015 IFIC Food and Health survey shows that 88 percent of consumers claim that they pay attention to ingredients listed on food labels when grocery shopping. Taking that consumer tendency into account, producers develop new ingredients or promote existing rather unknown ingredients as innovations or cutting edge features to create differential leverage in today’s competitive market. For example, during the launch of Colgate Total, it was heavily promoted as the first and only toothpaste *with* triclosan, an active ingredient that is effective in prevention of gingivitis and other dental issues. Within the same category, Tom’s of Maine toothpaste was positioned as having “propolis and myrrh,” highlighted on the front of package. Similarly, when it was first launched, Pantene, by

Procter and Gamble, established a distinctive position in the market by emphasizing that it contains a unique ingredient, pro-V.

There are several different information presentation and positioning approaches producers use while highlighting ingredients unknown to the customer. Among those, the two most frequently utilized strategies are emphasizing their complete presence or absence. For example, on the front of their packages, some dietary supplements indicate that they contain pomegranate, magnesium stearate, staminol or aminobutyric acid. Similarly, some protein bars promote on their packages that they have lecithin, sorbitol or caseinate as their main ingredients. Most ordinary consumers have hard times even to pronounce these ingredients let alone know their functions. These examples and several more sold in the market show that some producers try to differentiate and uniquely position their products by underlining the presence of some obscure ingredients in their offerings.

On the other hand, producers also promote the absence of particular ingredients in their products. For example, on a bottle of Totlogic shampoo, it is stated that the product is free of sulfate, paraben and phthalate. Similarly, Palmer's shampoo highlights on the front of its package that it has "no sulfates, no parabens, no phthalates, no mineral oil, no gluten". In those cases, manufacturers stress the *absence* of generally uncommon ingredients instead of their *presence*.

What appears to be even more interesting is that, some producers choose to highlight the presence of a particular ingredient while others choose to promote its absence. For example, going back to the triclosan example, similar to Colgate Total toothpaste, Safeguard hand soap refill highlights that it contains triclosan, whereas J.R. Watkins and CleanWell hand soaps emphasize that they do not have it. Similarly, while Review biscuits promotes that it has maltitol, ChocoRite patties emphasizes that it is maltitol free.

In the extant literature, the effects of absence versus presence positioning strategies regarding unknown ingredients (unknown to consumers) appear as an intriguing gap. Recently, a working paper by Ozcan et al. (2018) has shed some light on this gap, finding that, in general, a product that highlights the absence of an unknown ingredient on the front of package is evaluated significantly better than the same product promoting the presence of that ingredient. However, further research on information presentation and positioning strategies of unknown ingredients is granted to advance the findings with additional contextual variables. For example, one common variable that consumers are instantaneously exposed to while evaluating a product that emphasizes the presence or absence of an unknown attribute is the brand of that product. Specifically, products offered by established brands have the potential to provide a higher level of brand trust during the initial exposure.

Accordingly, in this research, I first shed a light on how customers' product evaluations are affected by the interaction between the absence versus presence

positioning of the unknown ingredients and the level of brand trust. To contribute to the generalizability of the findings. I use various unknown ingredients from several product groups. Furthermore, I employ follow-up studies by introducing a personal factor –need for cognition– and a packaging factor –on package message diagnosticity– to advance the theoretical and practical contributions of this research.

## CHAPTER 2: THEORETICAL BACKGROUND AND HYPOTHESES

In today's overly competitive marketplace, a common strategy producers use to differentiate themselves from competition is to add unique features or attributes to their products (Goldenberg et al., 2003; Mukherjee and Hoyer, 2001). Supporting the economic theory, one stream of research has demonstrated that adding attributes—even trivial ones—to products generally contributes to positive product evaluations (Carpenter et al., 1994; Meyers-Levy and Tybout, 1989; Mukherjee and Hoyer, 2001; Nowlis and Simonson, 1996). However, another stream of research reports conflicting findings, showing that the effects of adding attributes may be dependent on factors such as brand price/quality (Nowlis and Simonson, 1996; Simonson et al., 1994), size of the choice set (Brown and Carpenter, 2000) and attribute-specific associations (Broniarczyk and Gershoff, 1997). One important factor that should be taken into account in this domain is the level of familiarity consumers have with the added attributes. Although previous literature has shed some light on newly introduced *familiar* attributes, little is known about the effects of promoting totally *unknown* attributes. For example, adding vitamin D to a sports drink might be a new application in that category but adding a totally new ingredient, say *rilol*, is a different scenario. Thus, this research is focused on positioning strategies of totally unknown attributes, specifically, strategies regarding emphasizing presence or absence of obscure ingredients.

In the previous literature, levels of meaningfulness of product attributes have been conceptualized in several ways. One stream of research focused on trivial attributes and defined them as attributes that "appear valuable but, on closer examination, are irrelevant to creating the implied benefit" (Carpenter et al., 1994, p. 339). For example, if a scanner promotes that it offers interpolated resolution as an additional attribute and consumers learn from *Consumer Reports* that that feature does not provide any substantial advantage, that feature may be classified as a trivial attribute. Trivial attributes do not offer any concrete performance benefit but consumers might still perceive them as "ambiguously positive" (e.g., down filling to a winter jacket) (Brown and Carpenter 2000, p. 374). Moreover, trivial attributes may be totally fictional and associations may be fabricated by producers to provide novel associations (e.g., "Fahrvergnuegen" to describe Volkswagen) (Brown and Carpenter, 2000; Mukherjee and Hoyer, 2001). Research on trivial attributes finds that adding *familiar* attributes to a product generally improves product evaluation even when the attributes are irrelevant (Carpenter et al., 1994).

Furthering research on effects of introducing attributes, a additional research came from Mukherjee and Hoyer (2001) in which they focus solely on effects of *novel* attributes on product evaluation. They (2001) find that although the previous research shows that addition of novel attributes is likely to improve product evaluation and sales, the positive effect of novel attributes is observed only for low-complexity products. On the other hand, for high-complexity products, addition of novel attributes

was found to weaken product evaluations due to the negative learning-cost inferences about those attributes (Mukherjee and Hoyer, 2001).

### ***Positioning by Product Attribute Information***

In today's overly crowded and fragmented marketplace, companies face challenges in creating adequate differential advantages over their competitors (Clancy and Trout, 2002). To overcome this issue, marketing practitioners strive to establish appealing brand associations in minds of consumers to differentiate their brands from competitors by establishing unique brand positioning (Keller and Lehmann, 2006). In the prior literature, Kotler (2003, p.308) defines the concept of positioning as "the act of designing the company's offering and image to occupy a distinctive place in the mind of the target market". According to Kotler (2003, p.308), "the end result of positioning is the successful creation of a customer-focused value proposition, a cogent reason why the target market should buy the product." The general idea behind positioning efforts is the creation of a customer-focused value proposition, a substantial reason for consumers to choose the product over competitors (Kotler, 2003). Past literature shows that, when executed effectively, positioning should create a differential value proposition, which should lead to better product evaluations, consumer loyalty, consumer-derived brand equity, and willingness to look for the brand (e.g. Kalra and Goodstein, 1998; Schiffman and Kanuk, 2007).

In general, positioning strategies could be classified under two main categories as brand (operational) positioning and strategic (market) positioning (DiMingo, 1988; Fuchs and Diamantopoulos, 2010; Ellson, 2004). While strategic (market) positioning is conceptualized as a firm's distinct standing in the market relative to its competitors (Evans et al., 1996; Porter, 2008), brand (operational) positioning is defined as a firm's actions to create unique consumer perceptions about its products or brands (Crawford, 1985). When operational positioning is in effect, the focal message is about an aspect of the product itself (e.g. product characteristics), either tangible or not, which is sometimes not explicitly translated into the benefits it provides users (Crawford, 1985). The attributes (product features) focused in the operational positioning messages may be concrete such as Marlboro 25's "Have five more cigarettes to the pack," or abstract TWA's "Business class seats make the others obsolete." (Crawford, 1985, p.244). Furthermore, prior literature identifies the important distinction between intended, actual and perceived positioning (e.g. Ellson, 2004; Fuchs and Diamantopoulos, 2010). While intended positioning is about the associations a company wants to create regarding its brand and products, actual positioning may deviate from that goal as it is dependent on the contents of specific messages presented to consumers. The intended positioning messages have to be framed and conveyed to consumers via communication tools such as personal selling, direct marketing, advertising, sales promotions and package design. Thus, discrepancies between companies' positioning intentions and the way those messages are actually communicated to consumers are commonly observed in the marketplace. Moreover, even though the positioning messages are successfully conveyed by various

communication tools, there may still be some mismatch between the positioning intentions of companies and consumers' positioning perceptions. As consumers' perceptions incorporate complex aspects of consumer behavior such as learning, motivational and contextual factors, the outcome of positioning efforts may substantially deviate from companies' intentions. This risk is particularly present in case the information used in the positioning messages (e.g. the product features, attributes or ingredients) are not clearly identified by consumers or when they are presented in an abstract form (Pham and Muthukrishnan, 2002). There could be risks associated with discrepancies between how producers want to position their products in the minds of consumers by highlighting presence or absence of some unknown attributes and how these messages would affect the perceptions of consumers. For example, -would stressing the *absence* of an unknown attribute generate more positive consumer evaluation than highlighting the *presence* of the same unknown attribute or would it be perceived as a lacking feature and indicate a weakness- is a fundamental question to be empirically answered. Moreover, brand, product or consumer personality factors that could potentially be influential in this perception formation process should further be analyzed.

According to the product attributes model (Lancaster, 1966,1979; Gwin and Gwin, 2003) consumers develop their choices based on attributes of a product. This model postulates that individuals pay primary attention to the essential attributes of products. For example, computers differ in speed, accuracy, diligence, versatility and storage capacity which are the main criteria consumers take into account while

comparing options in their choice sets. Thus, understanding the preference development processes of consumers and shedding light on the underlying mechanisms in choice formation based upon product attributes could help marketers to explain why some consumers have preferences for certain products.

Lancaster's (1966,1979) product attributes model conceptualizes the individual preference formation process as a function of evaluating bundles of product attributes inherent in goods and services. The model is based on the assumption that consumers' preference is shaped by their utility maximization goal, subject to a budget constraint. Hauser and Simmie (1981) build on Lancaster's model and extended it to a full information processing model (i.e. physical feature followed by perceptions followed by preferences). However, Ladd and Zober (1977) point out that the model is dependent on the fundamental assumption that every attribute has a *nonnegative* perceived marginal utility. Accordingly, how consumers would factor in a specific product attribute when they do not have adequate information regarding its nature and functions stands as an integral gap in the literature.

### ***Attribute Framing***

Marketers continuously search for the most effectively-structured messages to convey information about the features of their products. In this communication process, framing of the messages plays a strategic role that influences interpretations (e.g., Entman, 1993; Levin et al., 1998). Using framing as a tool, marketers may

highlight certain attributes and make them more salient in communication (Entman, 1993, p. 52).

The extant literature shows that different mechanisms account for alternative types of message framing effects, such as those produced by risky choice, attribute, and goal framing (for a discussion of these distinctions, see Levin et al., 1998). In goal framing, the focus of the framed messages is on alternative behaviors and goals. Whenever goal framing is used to transfer information, the consequences of choosing a particular alternative are expressed either as an opportunity to gain a benefit or avoid a loss. Messages that are framed positively stress the benefits gained if one accepts a course of action (e.g., “You will reduce your heart failure risk if you take this medicine”). On the other hand, negatively framed messages stress the negative consequences incurred if one does not accept such action (e.g., “You will increase your risk of developing lung cancer should you smoke”). This concept is also related to Higgins’ (1997) regulatory focus theory, focusing on promotion and prevention strategies. According to this theory, message framing differs in its conceptual underpinnings, such that a benefit may be expressed as a gain if one adopts a particular course of action, or as a negative consequence that will be avoided if one adopts such action (Tykocinski et al., 1994).

In general, the previous research shows that, in the context of goal framing, negative frames are more effective than positive frames with regards to influencing attitudes and behavior (e.g., Banks et al., 1995; Schneider et al., 2001; Meyerowitz

and Chaiken, 1987; Wilson et al., 1990). For example, Ganzach and Karsahi (1995) illustrates that credit card customers are more responsive to messages that emphasize the losses one could experience from *misusage* of the card than the messages that emphasize the benefits they could gain by using the card. Moreover, it was shown by Olsen et al., (2014) that when consumers have a prioritized goal of environmental sustainability, the messages framed as focusing on the negative consequences are more effective in changing consumer brand attitudes than messages emphasizing positive consequences.

In their research, Foss and Lindenberg (2013) argue that situational cues activate these goals which in turn influence what information people pay attention to (e.g., Posner and Petersen, 1990), what knowledge they fluently access (e.g., Kruglanski and Köpetz, 2009; Förster et al., 2005), and what alternatives they prefer (e.g., Ferguson and Bargh, 2004). They claim that different types of goals may have different a priori weights and an overarching goal may have a suppressing primacy compared to lower order goals.

Thus, a focal question of the present research is, when a product message is framed as merely mentioning absence or presence of an unknown attribute, which type of goal framing is primarily invoked for consumers, and thus, plays the dominant role in shaping product evaluations? Does a message stressing the presence of an unknown attribute contribute to product evaluations more than a message underlining the absence, or vice versa? If that sort of discrepancy is observed, what would be the

underlying factor? Moreover, could some other factors, such as brand related or personal factors, alter that predominant framing effect?

### ***The Clean Label Trend***

Recent studies identified a market trend that consumers prefer products that are made with natural, healthier, ethical, green and sustainable ingredients (Doering, 2015; Winston, 2015). According to Schafer (2016), consumers no longer habitually put their favorite brands in their shopping carts, but instead they are reading the labels and trying to figure out whether products contain unpronounceable ingredients, artificial flavors and colors, GMOs and high levels of sweeteners and sodium. This shift in preferences is relentless and labeled as the “clean label” movement (Winston, 2015). This consumer movement demands transparency from manufacturers and asks for fewer, less processed and natural ingredients. In addition, this trend forces manufacturers to describe their ingredients in plain terms that every consumer could understand the function of each ingredient (Winston, 2015). Named as the “Trend of the Year” in 2016 by Food Business News, the clean label trend is increasingly prevalent. Seventy-five percent of American consumers claim to read the nutritional and ingredient labels of food products, and they strongly agree with the idea that the products should mostly contain recognizable ingredients (Watrous, 2016). In 2014, the “GMO (Genetically-Modified Organism)-free” food category saw 40% growth, and natural and organic food will take about 14% market share of all food category by 2020 (Watrous, 2016). This trend is observable in many household cleaning and

personal hygiene products as well as in food products where customers demand more natural and less chemical, non-toxic ingredients.

In order to respond this growing trend, food industry giants such as McDonald's and Subway are experimenting to make their products antibiotic-free. A major fast-food chain Panera Bread has a "no no list" of the ingredients that will not be used in their products. To increase transparency of their ingredients' origins and make them more recognizable, Panera Bread lists the ingredients in an understandable (e.g., "cream" instead of "microparticulated whey protein concentrate") (Winston, 2015). Whole Foods has a section on their website where they describe many ingredients as "unacceptable ingredients for food". Nestlé USA systematically removed artificial flavors and colors from more than 250 chocolate products by the end of 2015 (Doering, 2015). For example, their famous candy Butterfinger no longer contains Yellow 5 and Red 40; instead it is colored by annatto, from the seeds of a achiote tree. Similarly, paprika and cocoa powder is used instead of Blue 2, Yellow 5 and Yellow 6 in Nestlé Crunch Girl Scouts Caramel and Coconut bars (Doering, 2015). Major retailers such as Walmart, Costco and Whole Foods are increasing the pressure on manufacturers to make products with fewer, healthier and more natural ingredients (Doering, 2015). In the personal hygiene and household cleaning products category, new and high-growth brands such as Method, Seventh Generation, Tom's of Maine, Burt's Bees, and Green Works increased their sales and captured more market share since they claim to have gentler and less harmful ingredients.

Considering the magnitude of the clean label trend, it makes sense for brands such as Method to label their products with absence-framed ingredients such as “no triclosan”. However, our literature review in consumer behavior does not shed light on the questions of whether and if so why the absence-framing effect would generate better evaluations than presence framing of such ingredients. To summarize, attribute framing literatures suggest that, while the trivial ingredients enhance product perceptions and this effect is further bolstered by positive attribute framing, presence framing of unknown ingredients may not be as powerful as it used to be due to recent consumers’ desires reflected by the clean label movement.

### ***Brand as a Heuristic Cue***

When consumers encounter presence or absence positioning of an unknown product attribute, they lack judgement-relevant information to make an analytical assessment of the emphasized attribute. Chaiken and Trope (1999) show that in case of absence of concrete information, people tend to employ heuristic processing (i.e. use “methods for arriving at satisfactory solutions with modest amounts of computation” [Simon, 1990, p.11]). Along the same lines, Chaiken and Maheswaran (1994) show that, when messages are ambiguous, individuals employ mental shortcuts, basing their decisions on heuristic cues. Thus, when heuristic processing is in play, readily accessible information and rules of thumb (e.g., “products made in certain countries are of good quality”) dominate people’s decision processes (Chaiken and Trope, 1999).

In the prior literature, two main modes of information processing were posited within the framework of the heuristic-systematic model (Chaiken, 1980; Chaiken et al., 1989). *Systematic processing* is defined as “a comprehensive, analytic orientation to information processing in which perceivers carefully attend to, evaluate, elaborate, and integrate the content of the message as it bears on a particular attitude object” (Maheswaran et al., 1992). In the systematic mode, decisions are reached through detailed processing of the available information. Hence, the individual's *ability* and *motivation* to process determine whether systematic processing will be employed in any situation (Petty and Cacioppo, 1986). When individual's processing ability is low – for example, when the individual's knowledge about the subject matter is limited (Wood et al., 1985) or there is a time pressure in the evaluation process (Ratneshwar and Chaiken, 1991) –, heuristic processing tend to dominate. Theoretical models on cognitive economy and the heuristic-systematic model's *sufficiency principle* suggest that people tend to prefer less effortful means of assessing the validity of a message or the quality of a product and satisfy their level of confidence with a minimum of effort (Chaiken, 1980; Maheswaran and Meyers-Levy, 1990; Petty and Cacioppo, 1986). Under those conditions, *heuristic processing* predominates inference making by providing a means of limited information processing. When heuristic processing is in play, people assess the validity of a promotional message or the quality of a product through readily available cues within the judgmental context. For example, a rule of thumb such as "a message coming from an expert is credible" links the existence of an expert source to message validity (Ratneshwar and Chaiken, 1991).

Brand is an integral stimulus that consumers are exposed to together with the unknown attribute information on a product package. Maheswaran et al., (1992, p.319) argue that brand name may “generate expectations about a product by providing diagnostic information regarding the product's likely quality”. A brand provides consumers a quality cue which they may use in the process of forming expectations on the product’s quality, including safety. It is expected by consumers that, as companies heavily invest in their brand capital, they have a strong incentive to maintain product quality and avoid damage to brand reputation to maximize and sustain consumer confidence (Alam and Yasin, 2010). Consequently, brand information is likely to play a diagnostic role in the inference making process on unknown product attributes in the lack of prior information.

### ***Brand Trust***

In general, trust can be defined as the openness to rely on the other party based on the belief that it will perform as promised, despite a certain level of risk (Doney and Canon, 1997; Mayer et al., 1995). In other words, trust represents the confidence that the trusted party in a relationship will not abuse the trusting party’s vulnerability.

In prior literature, trust has been conceptualized as a multi-dimensional concept having sub-dimensions such as competence, integrity, and benevolence (Mayer et al., 1995; McKnight and Chervany, 2002). Trust has also captured interest in the brand–customer relationship context. Chaudhuri and Holbrook (2001, p.82)

defined brand trust as “consumers’ willingness to rely on the ability of the brand to perform its stated function”. Highlighting the consumers’ perceptions of a brand’s competence level or brand’s quality, prior research has shown that brand trust positively effects brand loyalty, and purchase decisions (Mayer et al., 1995; McKnight and Chervany, 2002).

Furthermore, trust has received substantial attention from scholars in a wide spectrum of disciplines including psychology, sociology, economics as well as in more practical areas such as management and marketing. Within the brand–customer relationship realm, Delgado-Ballester et al. (2003, p. 11) defined brand trust as “a feeling of security held by the consumer in his/her interaction with the brand, that it is based on the perceptions that the brand is reliable and responsible for the interests and welfare of the consumer”. A more parsimonious description came from Delgado-Ballester et al. (2003) defining brand trust as “the confident expectations of the brand’s reliability and intentions”. In marketing literature, brand trust has been conceptualized as having two main dimensions: technical competencies and intentional nature of the brand (Doney and Cannon, 1997; Ganesan, 1994; Morgan and Hunt, 1994). While the first dimension is related to the technical or competence-based aspects, including the brand’s capability and intention to keep promises and satisfy consumers’ needs, the second dimension is about the attribution of willingness of the brand in relation to the consumers’ interests and welfare, in case consumers face any unexpected problems with the product. This second dimension incorporates

characteristics such as altruism (Frost et al., 1978), benevolence and honesty (Larzelere and Huston, 1980), dependability and fairness (Rempel et al., 1985).

Prior research shows that brand trust influences perceptions of brand credibility (Erdem and Swait, 2004; Garbarino and Johnson, 1999), loyalty and commitment (Chaudhuri and Holbrook, 2001; Garbarino and Johnson, 1999; Sirdeshmukh et al., 2002). Consequently, brand trust has been presented as a central element in establishing successful marketing relationships (Morgan and Hunt 1994; Urban et al., 2000). Although a considerable amount of related research has been conducted, only a few studies have focused on the effects of consumers' brand trust perceptions on their attitude and purchase intentions (e.g. Doney and Cannon, 1997). More importantly, to date, no study has focused on how consumers' product evaluations are shaped as a function of the presence versus absence positioning of unknown product attributes and their brand perceptions, specifically their trust toward the brand.

Within the scope of this research, I draw on theorizing on interpersonal trust (Simpson 2007) to investigate formation of unknown attribute inferences as a function of the presence versus absence positioning of those attributes and brand trust. Luhmann (1979, p.24) argues that trust can be seen as an effective mechanism to reduce "the complexity of human conduct in situations where people have to cope with uncertainty". Accordingly, I posit that, when consumers lack the preliminary information about a highlighted unknown product attribute, they will employ brand

trust as a heuristic cue while establishing their evaluations. Specifically, when the brand fails to satisfy the trust element, consumers will be lacking the supportive brand information, and thus, they will evaluate the product with an emphasis on the *absence* of the unknown attribute higher than the product with an emphasis on its *presence*. On the other hand, I further postulate that, under high brand trust condition, consumers will assume that the brand would act in their best interest in developing and/or including an unknown attribute, and thus, their product evaluations will be influenced by the brand trust, such that the product with the *presence* positioning of the unknown attribute will be evaluated higher than the product with the *absence* positioning of the unknown attribute. One supporting evidence for this line of logic comes from Priester and Petty (1995, 2003), showing that people are inclined not to scrutinize message content from dependable sources.

H1<sub>a</sub>: *For a low-trust brand, an unknown attribute highlighted with absence positioning will generate a higher level of product evaluation than its presence positioning.*

H1<sub>b</sub>: *For a high-trust brand, an unknown attribute highlighted with presence positioning will generate a higher level of product evaluation than its absence positioning.*

### ***Perceived Product Capability***

According to economic theory, adding positively valued attributes to a product positively effects consumers' attitudes towards that product (Lancaster, 1971). Adding

extra features to a base of a product provides positive differentiation and perceived advantages over competitive products (Carpenter et al., 1994). An increase in demand to products with added attributes may be observed due to an increase in the product's perceived capability (i.e., consumers' beliefs regarding to what extent a product is capable of performing related functions) caused by an increase in the number of beneficial features included in a product (Thompson et al., 2005). When high brand trust is established as a reassurance signal, the preference towards the existence (versus its absence) of an unknown ingredient should be effective through the perception of increased product capability.

H2<sub>a</sub>: *Perceived product capability mediates the combined effects of presence positioning of an unknown ingredient and high brand trust on product evaluation.*

### ***Perceived Risk***

Emerging conceptualizations of brand trust include the role of consumers' risk perceptions and define brand trust as the consumer's level of confidence regarding brand's reliability and intentions in situations *involving risk* to the consumer. This definition is in line with the *expectancy* conceptualization of trust in the literature, highlighting presence of risk perception as a dominant factor for trust to play role in choice and customer behavior. Accordingly, trust has been defined as a psychological state and associated with *perceived probabilities* (Bhattacharya et al., 1998), *confidence* (Barney and Hansen, 1994; Garbarino and Johnson, 1999) or *expectations* (Rempel et al., 1985) that the trusting party will experience positive outcomes out of

the actions of the trusted party. As perceived risk has been presented as a compulsory element for brand trust to be influential in consumers' inference formation processes (Andaleeb, 1992; Mayer et al., 1995; Rempel et al., 1985), it is logical to expect that consumers would consider the trustworthiness of a brand as a prominent factor for their evaluations, especially when they face ambiguity based risk due to lack of supportive information. In this research, I suggest that when consumers are exposed to a product highlighting the absence of an unknown ingredient, due to lack of adequate information (i.e. attribute information and brand trust), their perception of the level of risk associated with the unknown ingredient will play an intermediary role in their evaluation process.

H2b: *Perceived risk mediates the combined effects of absence positioning of an unknown ingredient and low brand trust on product evaluation.*

### ***Need for Cognition***

Within the scope of this research, consumers are exposed to the presence versus absence positioning of an unknown ingredients together with the brand information. Depending on personal characteristics, some consumers may employ an attribute-based strategy while developing their inferences about the unknown ingredient (Mantel and Kardes, 1999). For those, the details about the functionality and nature of the unknown ingredient would be a main concern. On the other hand, other consumers may base their inference making process on peripheral cues (e.g. brand trust) while developing their evaluations and make use of an attitude-based

strategy. For those consumers, their general attitudes, summary impressions, intuitions, or heuristics (e.g. brand heuristic) would play the major role in their inference making processes (Mantel and Kardes, 1999). Specifically, Mantel and Kardes (1999) show that when attributes are unfamiliar, the judgment formation process may heavily depend on consumers' global attitudes and impressions about the brand (i.e. brand trust) which is available as a viable inference making resource.

Whether attribute-based or attitude based processing will be utilized in an inference making situation depends on decision maker's motivation and ability to process information (Sanbonmatsu and Fazio, 1990). One particular personal characteristic, *need for cognition* (Cacioppo and Petty, 1982) may determine when attribute-based decisions are likely and when attitude-based decisions are likely. Need for cognition, defined as the propensity to engage in and enjoy thinking, is an individual factor affecting motivation for elaboration (Cacioppo and Petty, 1982). High need for cognition consumers are more inclined to base their judgements on evaluations of product attributes, whereas low need for cognition consumers more often shape their attitudes depending on peripheral cues such as source attractiveness (Haugtvedt et al., 1992), source credibility (Petty and Cacioppo, 1986), or the number of arguments (Cacioppo et al., 1983), rather than the detailed analysis of the arguments. For example, Zhang and Buda (1999) find that high need for cognition consumers are less vulnerable to message-framing effects than low need for cognition consumers. In addition, humorous advertising has been shown to be more influential on low need for cognition consumers than high need for cognition consumers as

humor is used as a peripheral cue by the former group to a greater degree. Furthermore, compared to low need for cognition consumers, high need for cognition consumers recall more information (Kassin, et al., 1990) and generate more issue relevant thoughts (Lassiter, et al., 1991). This line of research indicates that high need for cognition individuals pay more attention to specifics and details in their inference making processes.

Building on the aforementioned findings regarding need for cognition as a personal psychological factor, I argue that individuals high in need for cognition would be less likely to be influenced by the peripheral brand information and decision biases, including the brand trust effect. In particular, I posit that the effect of presence versus absence positioning of an unknown ingredient will be moderated by the level of brand trust only for low need for cognition consumers. Low need for cognition consumers should utilize the brand trust level as a peripheral cue and build their product evaluations predominantly shaped by that indicator. Whereas high need for cognition consumers will need more information to “move the needle” and will be indifferent in their evaluations whether the unknown ingredient is highlighted as present or absent or the brand is trustworthy or not. In sum, based on the above discussion, while evaluating the positioning of an unknown ingredient, level of brand trust is expected to “matter” only for low need for cognition consumers.

*H3a: For a high-trust brand, for low (high) need for cognition consumers, presence positioning of an unknown attribute will (will not) generate a higher level of product evaluation than its absence positioning.*

H3b: *For a low-trust brand, for low (high) need for cognition consumers, absence positioning of an unknown attribute will (will not) generate a higher level of product evaluation than its presence positioning.*

### ***Message Diagnosticity***

The front of package (FOP) is a highly limited and valuable area which is needed to be carefully designed to maximize message efficiency. There usually is an optimal amount of information to be presented on the FOP, and exceeding this threshold may lead to unintended negative consequences such as consumer confusion, fatigue or misinterpretation (Andrews et al., 2011; Newman et al., 2014). Thus, FOP designs that include few functional or attribute messages besides the brand elements is common. These highlighted messages placed on FOP simply and diagnostically guide consumers to the information they can use in developing their product evaluations the way the marketer wants them to. However, there is usually additional information that product packages need to include, some of which are enforced by regulations. Most of the detailed information (e.g., ingredients list) may or may not go unnoticed due to the need for cognition levels of consumers. Thus, a logical extension to my previously stated expected findings would be to ask what would happen to the proposed effects if consumers are exposed to more detailed information (i.e. information about all the included ingredients) on the FOP, together with ingredient positioning and brand trust information.

According to accessibility/diagnosticity theoretical framework (Alba et al., 1991; Keller et al., 1997), simplistic message formats (e.g., one with a main message on presence or absence of an unknown ingredient) could be more accessible and diagnostic. On the other hand, when consumers are exposed to detailed information (e.g., with an ingredients list) together with the main message about an unknown ingredient, the diagnosticity provided by the main message could be weakened and diluted. In that case, consumers with a lower level of need for cognition could think of the highlighted unknown ingredient as one of many ingredients—nothing special—and thus, not be influenced by the positioning message highlighting its presence or absence. On the other hand, as consumers with high need for cognition would in fact need that sort for additional information to form their evaluations on the unknown ingredient, presence of the unknown ingredient together with a number of other ingredients could legitimize its existence and generate favorable evaluations toward the product.

*H4<sub>a</sub>: For a trusted brand, when consumers are not exposed to an ingredients list (i.e. high diagnosticity), for low (high) need for cognition consumers, presence positioning of an unknown attribute will (will not) generate a higher level of product evaluation than its absence positioning.*

*H4<sub>b</sub>: For a trusted brand, when consumers are exposed to an ingredients list (i.e. low diagnosticity), for both high and low need for cognition consumers, presence positioning of an unknown attribute will generate a higher level of product evaluation than its absence positioning.*

I conducted four experimental studies to test the aforementioned hypotheses.

## CHAPTER 3: METHODOLOGY AND ANALYSES

### *Study 1*

Study 1 was designed to investigate how consumers evaluate a product that emphasizes presence versus absence of an unknown ingredient with a high level of brand trust versus a low level of brand trust. Consistent with hypothesis 1<sub>a</sub>, I posited that in a case of low brand trust, an unknown attribute highlighted with absence positioning will generate a higher level of product evaluation than its presence positioning. On the other hand, consistent with hypothesis 1<sub>b</sub>, I predicted that for a highly trusted brand, an unknown attribute highlighted with presence positioning will generate a higher level of product evaluation than its absence positioning.

### *Method*

#### *Participants and Design*

Participants were 140 adults recruited from Amazon Mechanical Turk (55.7 per cent female, *median* age = 35). In a 2 (ingredient positioning: absence vs presence) x 2 (brand trust level: high vs low) between-subjects design, participants were randomly assigned to the experiment conditions and asked to evaluate a fictitious energy bar (Brand-A). Those in the presence positioning group saw products emphasizing presence of a fictitious unknown ingredient “rilol”, whereas those in the

absence positioning group saw products emphasizing the lack of the ingredient. Prior research by Klink (2000) in sound symbolism was utilized to create the fictitious ingredient name (e.g. voiced/voiceless stops and fricatives and front/back vowels). Following Insko et al. (2005), Lount (2010) and Herbst et al. (2011), those in the high brand trust group read fictitious news, mentioning that in a consumer magazine, consumers rated the brand producing Energy Bar-A highly trustworthy; those in the low brand trust group read fictitious news telling that in a consumer magazine, consumers rated the brand producing Energy Bar-A relatively untrustworthy.

### *Dependent Measures*

After getting exposed to the treatments, participants answered a series of questions related to the treatment stimulus. First, they rated their agreement (1 = strongly disagree. . . 7 = strongly agree) with four product-attitude questions: (e.g. I like Energy Bar-A with rilol). Second, they were asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with brand trust related statements (Herbst et al., 2011): (e.g. This is a trustworthy brand). Third, for the manipulation check of the presence versus absence positioning of the unknown ingredient, participants marked their choice regarding the information they recall receiving in the beginning of the survey (i.e. “with” versus “without” rilol). Fourth, they answered questions to reflect their knowledge the unknown ingredient -rilol. Next, the participants provided their demographic data, namely education level, gender and age. Finally, the participants

were thanked for their time, and the study ended. For a complete list of measures used in Study 1, see Appendix.

## *Results*

### *Manipulation checks*

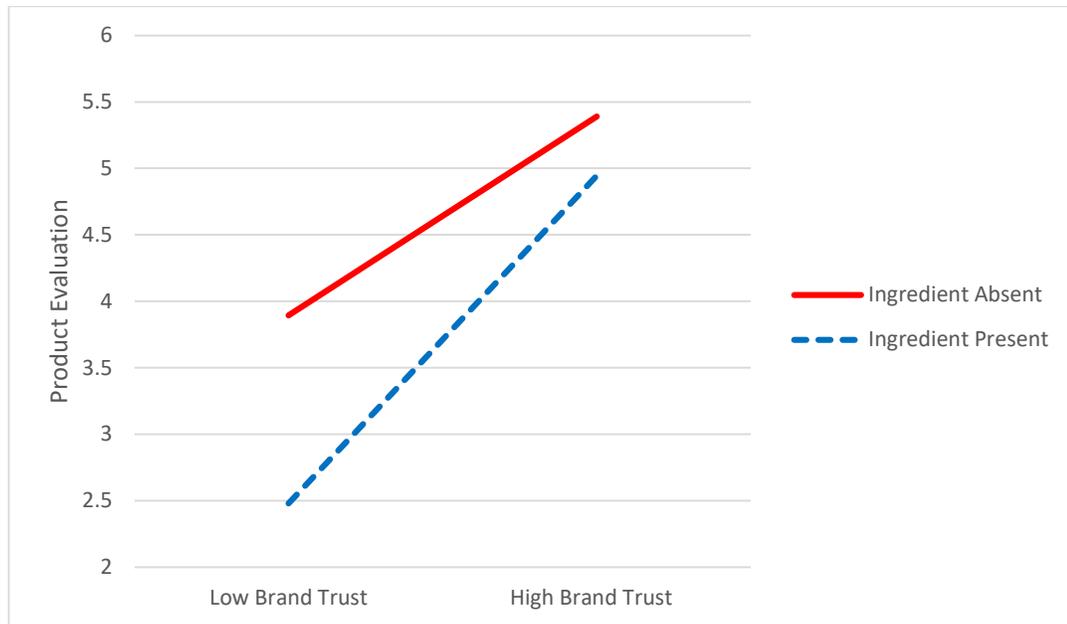
Factor analysis revealed that measures related to brand trust manipulation loaded onto one factor (loadings, .95 - .67, Cronbach's  $\alpha = .975$ ). Thus, the 11 measures were condensed into one composite measure: brand trust. A one-way ANOVA was used to verify that the manipulation of brand trust was successful. The ANOVA with the brand trust conditions as the independent variable and the brand trust composite variable as the dependent variable revealed a significant main effect [ $M_{\text{HighTrust}} = 5.35$  vs.  $M_{\text{LowTrust}} = 3.06$ ;  $F(1, 138) = 138.72, p < .001, \eta_p^2 = .501$ ]. To check for the absent/present ingredient positioning manipulation, a chi-square analysis was conducted. Successful presence/absence manipulation was qualified by a significant interaction between the two variables [ $\chi^2(1) = 77.54, p < .001$ ] such that 87.2 per cent of the participants marked the manipulation check item in accord with the intended manipulation.

### *Main test*

Factor analysis revealed that items related to product evaluations loaded onto one factor (loadings, .95 to .94, Cronbach's  $\alpha = .96$ ). Thus, the 4 items were condensed into one composite measure: product evaluation.

An ANCOVA on the product evaluation composite controlling for perception of ingredient familiarity did not generate any significant covariate ( $p = .39$ ). An ANOVA on the product evaluation composite yielded main effects for brand trust  $F(1, 136) = 74.84, p < .001, \eta_p^2 = .355$  and ingredient positioning  $F(1, 136) = 16.54, p < .001, \eta_p^2 = .108$ . The ANOVA revealed a significant interaction between brand trust and ingredient positioning ( $F(1, 136) = 4.31, p = .04, \eta_p^2 = .03$ ). A planned contrast analysis was conducted to test H1<sub>a</sub>. According to the results of that planned contrast analysis, within the condition of low brand trust, the product with absence unknown ingredient positioning was evaluated significantly higher than the product with presence positioning ( $M_{\text{IngredientAbsent}} = 3.89, M_{\text{IngredientPresent}} = 2.49; F(1, 136) = 18.6, p < .001, \eta_p^2 = .12$ ; see Figure 3.1). A second planned contrast analysis was conducted to test H1<sub>b</sub>. The planned contrast to test H1<sub>b</sub> did not show any simple main effect of the presence versus absence positioning under the condition of high brand trust ( $M_{\text{IngredientAbsent}} = 5.39, M_{\text{IngredientPresent}} = 4.94; F(1, 136) = 2.01, p = .158, \eta_p^2 = .015$ ; see Figure 3.1).

**Figure 3.1:** Means for Product Evaluations as A Function of Unknown Ingredient Positioning and Brand Trust (Study 1)



### *Discussion*

Providing support for H1<sub>a</sub>, the results of Study 1 demonstrate how product evaluations are significantly better toward a product which emphasize the absence of the unknown ingredient versus a product emphasize the presence of the unknown ingredient under the low brand trust condition. On the other hand, for a product with high brand trust, there is no significant difference in consumers' product evaluations prompted by the presence versus absence accentuation of the unknown ingredient, thus H1<sub>b</sub> was not supported. This finding suggests that, high brand trust suppresses consumers' concerns regarding the unknown ingredient by providing a significant level of reassurance. High brand trust dominates the consumer evaluations and turns

the significant effect of presence versus absence positioning of an unknown ingredient observed in the low brand trust condition into non-significant. Trusting the brand, participants evaluated a product with or without an unknown ingredient comparably.

These effects were achieved by presenting a completely fictitious ingredient (“rilol”), about which the participants had no prior knowledge or information. In this way, I was able to establish the condition that participants were unbiased by perceptions of the nature of the ingredient and narrow down the scope of the research to unknown or brand new ingredients. Furthermore, brand trust was manipulated by using a generic name (Brand-A) which was chosen to avoid any possible confounding effects associated with the brand. However, that choice may be the reason for not observing the hypothesized *crossover* interaction between ingredient positioning and brand trust. It is probable that, in case a highly trusted real brand (e.g. Apple in the electronics category) was used in the design instead of “Brand-A”, participants could have preferred the presence of an unknown attribute over its absence as they could have perceived the presence of an obscure attribute as an invention or a special added feature developed by Apple.

## ***Study 2***

The procedure in Study 2 was similar to Study 1, but in order to generalize the results more broadly, a product from another category -hand soap- was used. To reinforce external validity, a different fictitious ingredient name, “rewum” was used in

addition to including items to control for possible phonetic effects (Klink, 2000). Moreover, additional items were operationalized to test the hypothesized mediation model, which postulates that the effects of positioning and brand trust on product evaluation is mediated by perceived risk.

### *Method*

#### *Participants and Design*

140 US-based respondents (47.1 per cent female, *median* age = 34) participated the study via Amazon Mechanical Turk. In a 2 (positioning: absence vs presence) x 2 (brand trust: low vs high) between-subjects design, participants were randomly assigned to the experiment conditions and asked to evaluate a fictitious hand soap (Brand-A). The procedure was identical to Study 1, except for the ingredient name, “rewum”, and inclusion of items to measure the proposed process variables, namely perceived product capability and perceived risk, as well as items to control for ingredient name phonetics and ingredient familiarity.

#### *Dependent Measures*

After getting exposed to the treatments, participants were asked a series of questions specifically pertaining to the operationalized variables. First, they rated their agreement (1 = strongly disagree. . .7 = strongly agree) with five product evaluation

questions: (e.g. I find Hand Soap-A with rewum likeable). They were also asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with perceived risk-related statements (adapted from Stone and Gronhaug 1993): (e.g. I am concerned that Hand Soap-A with rewum could lead to some uncomfortable physical side-effects). Next, in a 7-point semantic scale, participants rated their perceived product capability on three items anchored as perform poorly - perform well; offer few advantages - offer a lot of advantages; add little value - add a lot of value (Thompson et al., 2005). Then, participants provided their agreement with the brand trust and product positioning items. Furthermore, they were asked their agreement with three ingredient phonetic items (i.e. strong, pretty, and friendly) and ingredient knowledge item. Finally, the participants answered demographics questions, were thanked for their time, and the study ended. For a complete list of measures used in Study 2, see Appendix.

## *Results*

### *Validity, Reliability and Manipulation Checks*

A factor analysis with varimax rotation revealed a three-factor solution with eigenvalues greater than 1 (variance explained = 88%), corresponding to product evaluation (loadings, .90-.86); perceived risk (loadings, .90-.69); and perceived product capability (loadings, .88-.86) with no major cross-loadings. Internal

consistencies of the composite measures were verified with Cronbach's  $\alpha$  values of .971, .952 and .967, respectively.

For the manipulation check of brand trust, a composite measure was created (loadings, .96-.79,  $\alpha = .983$ ). An ANOVA with the brand trust condition as the independent variable and the brand trust composite variable as the dependent variable revealed a significant main effect [ $M_{\text{HighTrust}} = 5.39$  vs.  $M_{\text{LowTrust}} = 2.91$ ;  $F(1, 138) = 128.93$ ,  $p < .001$ ,  $\eta_p^2 = .483$ ], confirming the successful manipulation of brand trust. To verify the absent/present ingredient positioning manipulation, another ANOVA was conducted with the ingredient content question as the dependent variable and the presence/absence conditions as the independent variable. Once again, the results of this ANOVA showed a significant main effect [ $M_{\text{IngredientAbsent}} = 1.79$  vs.  $M_{\text{IngredientPresent}} = 6.32$ ;  $F(1, 138) = 335.56$ ,  $p < .001$ ,  $\eta_p^2 = .709$ ], verifying the successful manipulation of ingredient positioning.

### *Brand Trust and Ingredient Positioning Interaction*

An ANCOVA on the product evaluation composite controlling for perception of ingredient familiarity and phonetic effects did not generate any significant covariate ( $ps = .15 - .54$ ). In line with findings of Study 1, an ANOVA on product evaluation yielded main effects for brand trust  $F(1, 136) = 56.94$ ,  $p < .001$ ,  $\eta_p^2 = .295$  and ingredient positioning  $F(1, 136) = 14.76$ ,  $p < .001$ ,  $\eta_p^2 = .098$ . More importantly, the ANOVA revealed a significant interaction between brand trust and ingredient

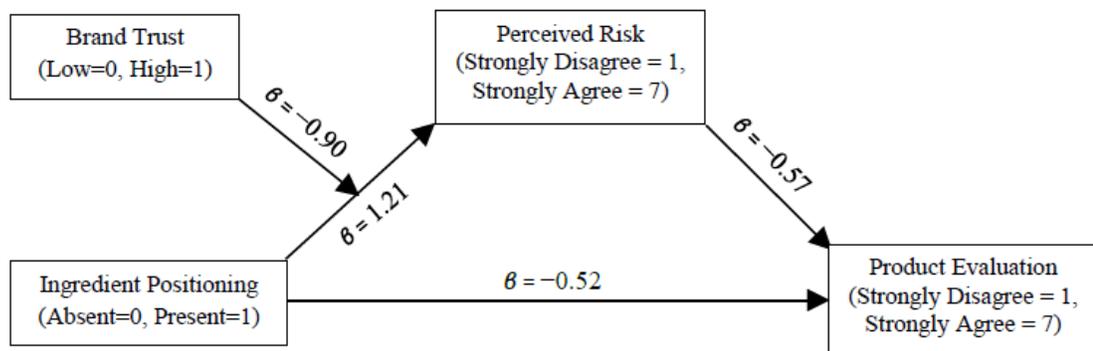
positioning  $F(1, 136) = 4.185, p = .043, \eta_p^2 = .03$ ). In support of H1<sub>a</sub>, within the low brand trust condition, the product with absence unknown ingredient positioning was evaluated significantly higher than the product with presence positioning ( $M_{\text{IngredientAbsent}} = 3.98, M_{\text{IngredientPresent}} = 2.53; F(1, 136) = 17.8, p < .001, \eta_p^2 = .11$ ). On the other hand, under the high brand trust condition, the product evaluations were not statistically different for presence versus absence positioning ( $M_{\text{IngredientAbsent}} = 5.33, M_{\text{IngredientPresent}} = 4.89; F(1, 136) = 1.57, p = .213$ ).

### *Moderated Mediation Analysis*

A moderated mediation (Hayes, 2017, Model 7) analysis was conducted to test H2<sub>a</sub>. That test did not generate any significant results, thus H2<sub>a</sub> was ruled out. To test H2<sub>b</sub>, another moderated mediation (Hayes, 2017, Model 7) analysis was conducted that included ingredient positioning as the predictor (absent=0, present=1), product evaluation as the dependent measure (strongly disagree = 1, strongly agree = 7), with perceived risk (strongly disagree = 1, strongly agree = 7) as mediator and brand trust (low=0, high=1) as the moderator. As shown in Figure 3.2, the presence positioning of the ingredient significantly increased perceived risk ( $\beta = 1.21, SE = .31, 95\% CI = .58 \text{ to } 1.83$ ), which in turn significantly decreased product evaluation ( $\beta = -.57, SE = .08, 95\% CI = -.72 \text{ to } -.42$ ). Critically however, this indirect effect of ingredient positioning on product evaluation was significant in the low brand trust condition ( $\beta = -.69, 95\% CI = -1.08 \text{ to } -.38$ ) but not significant in the high brand trust condition ( $\beta = -.18, 95\% CI = -.64 \text{ to } .24$ ). Thus, the mediation by perceived risk was significantly

moderated by brand trust ( $\beta = -1.45$ ,  $SE = .33$ ,  $95\% \text{ CI} = -2.1 \text{ to } -.81$ ). This finding of moderated mediation supports H2<sub>b</sub>. Nonetheless, the direct effect ingredient positioning on product evaluation remained significant ( $\beta = -.52$ ,  $SE = .26$ ,  $95\% \text{ CI} = -1.03 \text{ to } -.01$ ), indicating partial mediation by perceived risk. Additional analyses (e.g. PROCESS Models 8, 14, and 15) did not reveal any significant mediation models.

**Figure 3.2: Moderated Mediation (Study 2)**



### *Discussion*

Study 2 provides further evidence that the effect of ingredient positioning on product evaluation depends on the level of brand trust. Once again, under low brand trust condition, participants evaluated the product with the absence message of the unknown ingredient ( $M_{\text{IngredientAbsent}} = 3.98$ ) significantly higher than the product with the presence message of the unknown ingredient ( $M_{\text{IngredientPresent}} = 2.53$ ). On the other

hand, a significant difference was not observed between presence versus absence ingredient positioning under the high brand trust condition. Moreover, Study 2 demonstrated that this moderation effect was mediated by risk perceptions of the participants, such that, the indirect effect of ingredient positioning through perceived risk was significant when brand trust was low but not significant when brand trust was high, thereby supporting H2b.

### *Study 3*

Study 3 was designed to further the findings in studies 1 and 2 and explore an interaction between ingredient positioning, brand trust and need for cognition (NFC) to test H3a and H3b. A similar but extended procedure used in studies 1 and 2 was used in Study 3, which included a product from the food category –ketchup– (Brand-A) to add onto the generalizability of the previous findings. To further contribute to the external validity, a different fictitious ingredient name, “milol” was used together with items to control for possible phonetic and perceived familiarity effects. Moreover, items to measure participants’ need for cognition were included to test the hypothesized three-way interaction which postulates conditional effects of ingredient positioning and brand trust depending on the NFC levels.

### *Method*

#### *Participants and Design*

279 US residents (44.4 per cent female, *median* age = 36) participated the study with a random assignment on Amazon Mechanical Turk in exchange for payment. The experiment had a 2 (positioning: absence vs presence) x 2 (brand trust: low vs high) x 2 (NFC: low vs high) design, with positioning and brand trust as between-subjects factors, and NFC as a measured variable. The procedure was similar to Study 2 except for the product category, -food-, the ingredient name, “milol”, and inclusion of items to measure NFC levels of the participants.

### *Dependent Measures*

After getting exposed to the treatments, participants were asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with five product evaluation questions: (e.g. I find Ketchup-A with milol likeable) (Ozcan et al., 2018). Next, they were asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with six perceived risk-related statements (adapted from Stone and Gronhaug, 1993): (e.g. I am concerned that Ketchup-A with milol could lead to some uncomfortable physical side-effects). Next, in a 5-point scale (1 = extremely uncharacteristic of me. . . 5 = extremely characteristic of me), participants rated their need for cognition (Cacioppo et al., 1984). Then, participants provided their agreement with the brand trust and product positioning items. Furthermore, they were asked their opinions on three ingredient phonetic items (i.e. strong, pretty, and friendly) and two ingredient knowledge items on two ingredients: tomato puree and milol. Finally, they answered

demographics questions, were thanked for their time, and the study ended. For a complete list of measures used in Study 3, see Appendix.

## *Results*

### *Validity, Reliability and Manipulation Checks*

A factor analysis with varimax rotation was conducted including the items for product evaluation, perceived risk and NFC. This factor analysis revealed four factors with eigenvalues above 1 (variance explained = 72%). The items used for measuring product evaluation (loadings, .89 - .85) and perceived risk (loadings, .90 - .81) clearly loaded on single factors with no major cross loadings. Internal consistencies of product evaluation and perceived risk measures were verified with Cronbach's  $\alpha$  values of .972, and .953, respectively. The items included for measuring NFC loaded onto two factors. Previous research has shown (e. g., Sadowski, 1993; Stark et al., 1991) and explained the reason for a two dimensional loadings in a unidimensional NFC scale. In the utilized 18-item NFC scale (Cacioppo et al., 1984), half of the items reflect a preference for effortful cognitive endeavors (e. g., "I prefer my life to be filled with puzzles that I must solve"), whereas the remaining items reflect the absence of such a preference (e. g., "Thinking is not my idea of fun") and such items are reverse coded in the calculation of the overall scale score. Negative phrased items were included in many scales with the intention of controlling for response bias effects such as acquiescence (e. g. Nunnally, 1967) and was based on the assumption that

positively or negatively phrasing items should not create any discrepancies in measuring the same construct. However, Benson and Hocaevlar, (1985) reported that means, variances and factor structures can be different for positive and negatively phrased items. Hevey et al. specifically investigated the factor structure of Cacioppo et al.'s (1984) NFC scale by referring to the previous findings, comparing unidimensional models with two dimensional models, and concluding that a single factor model provides the best fit having the highest level of internal consistency. In line with Hevey et al.'s findings, my internal consistency analysis generated the highest Cronbach's  $\alpha$  value with the unidimensional model (.941) compared to the two dimensional model: positive items ( $\alpha = .921$ ) and negative items ( $\alpha = .923$ ). Thus, the positively and negatively phrased items (after reverse coding) (loadings, .80 - .61) were jointly included while constructing the composite variable for NFC.

For the manipulation check of brand trust, a composite measure was created (loadings, .95 - .78, Cronbach's  $\alpha = .98$ ). An ANOVA with the brand trust condition as the independent variable and the brand trust composite variable as the dependent variable revealed a significant main effect [ $M_{\text{HighTrust}} = 5.39$  vs.  $M_{\text{LowTrust}} = 3.01$ ;  $F(1, 277) = 303.29$ ,  $p < .001$ ,  $\eta_p^2 = .523$ ], confirming the successful manipulation of brand trust.

To verify the absent/present ingredient positioning manipulation, another ANOVA was conducted with the ingredient content question as the dependent variable and the presence/absence condition as the independent variable. Once again, the results of this ANOVA showed a significant main effect [ $M_{\text{IngredientAbsent}} = 2.11$  vs.  $M_{\text{IngredientPresent}} = 6.68$ ;  $F(1, 277) = 56.33$ ,  $p < .001$ ,  $\eta_p^2 = .669$ ], verifying the successful manipulation of ingredient positioning.

### *Brand Trust and Ingredient Positioning Interaction*

I conducted an ANCOVA with brand trust and ingredient positioning as independent variables and product evaluation as the dependent variable, controlling for ingredient familiarity and phonetic effects. Phonetic effects and ingredient familiarity for the known ingredient – tomato puree - had no significant effect in the model, and thus were dropped from the model. The ANCOVA with brand trust and ingredient positioning as independent variables and product evaluation as the dependent variable, controlling for ingredient familiarity for the unknown ingredient – milol- revealed a significant interaction between brand trust and ingredient positioning  $F(1, 274) = 5.33, p = .022, \eta_p^2 = .019$ ). Moreover, ANCOVA yielded main effects for brand trust  $F(1, 274) = 249.97, p < .001, \eta_p^2 = .477$  and ingredient positioning  $F(1, 274) = 19.62, p < .001, \eta_p^2 = .067$ . Under the high brand trust condition, the product evaluations were not statistically different for presence versus absence positioning ( $M_{\text{IngredientAbsent}} = 5.31, M_{\text{IngredientPresent}} = 5.01; F(1, 274) = 2.27, p = .133$ ). On the other hand, supporting H1<sub>a</sub>, within the low brand trust condition, the product with absence unknown ingredient positioning was evaluated significantly higher than the product with presence positioning ( $M_{\text{IngredientAbsent}} = 3.41, M_{\text{IngredientPresent}} = 2.45; F(1, 274) = 22.56, p < .001, \eta_p^2 = .08$ ).

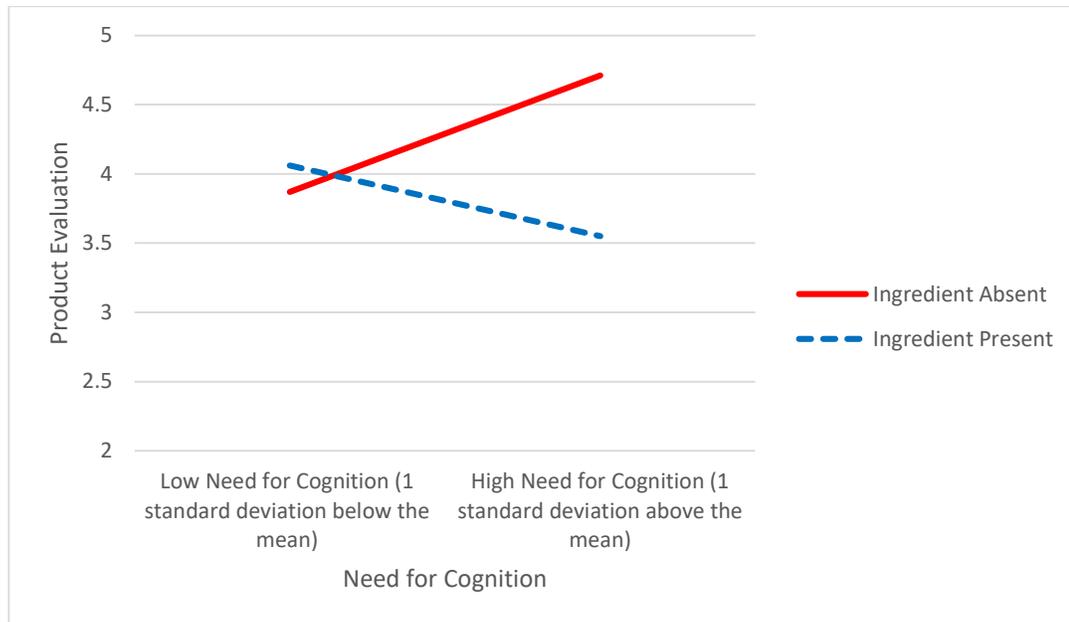
### *Moderated Mediation Analysis*

To retest H2<sub>b</sub>, another moderated mediation (Hayes, 2017, Model 7) analysis was conducted that included ingredient positioning as the predictor (absent=0, present=1), product evaluation as the dependent measure (strongly disagree = 1, strongly agree = 7), with perceived risk (strongly disagree = 1, strongly agree = 7) as mediator and brand trust (low=0, high=1) as the moderator. Replicating the findings presented in Study 2, presence positioning of the ingredient significantly increased perceived risk ( $\beta = 1.24$ ,  $SE = .23$ , 95% CI = .78 to 1.69), which negatively affected product evaluation ( $\beta = -.67$ ,  $SE = .05$ , 95% CI = -.77 to -.57). Critically however, this indirect effect of ingredient positioning on product evaluation was significant in the low brand trust condition ( $\beta = -.83$ , 95% CI = -1.16 to -.55) but not significant in the high brand trust condition ( $\beta = -.28$ , 95% CI = -.60 to .03). The mediation analysis show that perceived risk was significantly moderated by brand trust ( $\beta = -.96$ ,  $SE = .22$ , 95% CI = -1.41 to -.52). When perceived risk was added to the model as the mediator, the direct effect of ingredient positioning on product evaluation was not significant ( $\beta = -.1$ ,  $SE = .15$ , 95% CI = -.41 to .21), indicating full mediation. These findings once again support H2<sub>b</sub>. Additional analyses (e.g. PROCESS Models 8, 14, and 15) did not reveal any significant mediation models.

### *Brand Trust, Ingredient Positioning and NFC Interaction*

To test hypotheses H3<sub>a</sub> and H3<sub>b</sub>, using the PROCESS Model 3 procedure (Hayes, 2017), I conducted a regression on product evaluation with brand trust, ingredient positioning and NFC, their two-way interactions, and the three-way interaction as independent variables, controlling for ingredient familiarity and phonetic effects. Phonetic effects had no significant effect in the model, and thus dropped from the model, whereas ingredient familiarity for the unknown ingredient appeared as a significant covariate. The overall model was significant ( $F(8, 270) = 42.68, p < .001$ ). Among the main effects, significant was brand trust ( $\beta = 1.67, t(270) = 2.25, p < .025$ ). Importantly, as shown in Figure 3.3, the two-way interaction between ingredient positioning and NFC ( $\beta = -.411, t(270) = -2.09, p = .037$ ) was also significant. Following Irwin and McClelland (2001), a spotlight analysis was conducted at +1SD and -1SD of the NFC measure to determine whether the effect of ingredient positioning differed by NFC levels. A regression on product evaluation with ingredient positioning and NFC, controlling for ingredient familiarity for the unknown ingredient showed that under the low NFC condition (-1SD), the effect was not significant ( $\beta = -.176, t(274) = -.6$ ), whereas under the high NFC condition (+1SD), the effect of ingredient positioning was significant ( $\beta = -1.156, t(274) = -3.85, p < .001$ ). Critically however, the three-way interaction was not significant, ruling out H3<sub>a</sub> and H3<sub>b</sub>.

**Figure 3.3:** The Interaction between Unknown Ingredient Positioning and NFC on Product Evaluation (Study 3)



*Discussion*

Study 3 provides additional evidence that the effect of ingredient positioning on product evaluation depends on the level of brand trust. In line with previous findings, analyses show that under low brand trust condition, participants evaluated the product with the absence message of the unknown ingredient ( $M_{\text{IngredientAbsent}} = 3.41$ ) significantly higher than the product with the presence message of the unknown ingredient ( $M_{\text{IngredientPresent}} = 2.45$ ). Moreover, in Study 3, I confirmed that this moderation effect was mediated by risk perceptions of the participants, such that, the indirect effect of ingredient positioning through perceived risk was significant when brand trust was low but not significant when brand trust was high. In Study 3, I

introduced a third variable to the model. Although the predicted three-way interaction between brand trust, ingredient positioning and NFC was not significant, a two-way interaction between ingredient positioning and NFC was identified as an additional finding. Following the aforementioned literature, in this study, NFC was included in the model as a *measured* individual-difference variable. It is probable that the observed non-significant results in the hypothesized three-way interaction might have been due to the operationalization method of NFC. As an alternative method, to intensify and polarize the cognition needs of participants, NFC can be manipulated. Although it is a personality variable and has mostly been measured but not manipulated in the previous literature, following Smith and Levin (1996), NFC can be manipulated by asking participants to ‘think about the justification of their decisions’. With that sort of a purposeful conditioning and manipulation, the proposed effects may be observed.

#### ***Study 4***

Study 4 was designed to further the findings in studies 1,2 and 3 and it explores an interaction between ingredient positioning, brand trust and diagnosticity level of the main message to test H4<sub>a</sub> and H4<sub>b</sub>. Moreover, NFC levels of the participants were also measured to replicate the conditions in Study 3. In Study 4, in order to contribute to the external validity of the findings, a product was chosen from the cosmetics category –shampoo– (Brand-A) was used in manipulations.

Furthermore, a different fictitious ingredient name, “lorim” was used together with items to control for possible phonetic and perceived familiarity effects.

### *Method*

#### *Participants and Design*

280 US residents (48.2 per cent female, *median* age = 34) participated the study with a random assignment on Amazon Mechanical Turk in exchange for payment. The experiment had a 2 (positioning: absence vs presence) x 2 (brand trust: low vs high) x 2 (diagnosticity: low vs high) design, with positioning, brand trust and diagnosticity as between-subjects factors, and NFC as a measured variable. The procedure was similar to previous studies except for the product category, -cosmetics-, the ingredient name, “lorim”.

#### *Dependent Measures*

Similar to previous studies, the participants were first asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with five product evaluation questions: (e.g. I find Shampoo-A with lorim likeable). Next, they were asked to rate their agreement (1 = strongly disagree. . . 7 = strongly agree) with perceived risk-related statements (adapted from Stone and Gronhaug, 1993): (e.g. I am concerned that Shampoo-A with lorim could lead to some uncomfortable physical side-effects). Next, in a 5-point scale (1 = extremely uncharacteristic of me. . . 5 = extremely

characteristic of me), participants rated their need for cognition (Cacioppo et al., 1984). Then, participants provided their agreement with the brand trust, product positioning and diagnosticity manipulation check (adapted from Kempf and Smith, 1998) items. Furthermore, they were asked their opinions on three ingredient phonetic items (i.e. strong, pretty, and friendly) and two ingredient knowledge items on two ingredients: lavender and lorim. Finally, they answered demographics questions, were thanked for their time, and the study ended. For a complete list of measures used in Study 4, see Appendix.

## *Results*

### *Validity, Reliability and Manipulation Checks*

A factor analysis with varimax rotation was conducted including the items for product evaluation, perceived risk and NFC. Similar to Study 3, the factor analysis revealed four factors with eigenvalues above 1 (variance explained = 72%). The items used for measuring product evaluation (loadings, .92 - .87) and perceived risk (loadings, .89 - .75) loaded on single factors with no major cross loadings. Cronbach's  $\alpha$  values for product evaluation and perceived risk were .973, and .952 respectively, which indicates good reliability. In line with Study 3, the positively and negatively phrased items were jointly included (after reverse coding) to construct the NFC composite measure (loadings, .82 - .63; Cronbach's  $\alpha$ , .95).

Once again, for the manipulation check of brand trust, a composite measure was created (loadings, .94 - .82, Cronbach's  $\alpha = .98$ ). An ANOVA with the brand trust condition as the independent variable and the brand trust composite variable as the dependent variable revealed a significant main effect [ $M_{\text{HighTrust}} = 5.24$  vs.  $M_{\text{LowTrust}} = 3.44$ ;  $F(1, 278) = 125.07, p < .001, \eta_p^2 = .31$ ], confirming the successful manipulation of brand trust. To verify the absent/present ingredient positioning manipulation, another ANOVA was conducted with the ingredient content question as the dependent variable and the presence/absence condition as the independent variable. Once again, the results of this ANOVA showed a significant main effect [ $M_{\text{IngredientAbsent}} = 2.13$  vs.  $M_{\text{IngredientPresent}} = 6.74$ ;  $F(1, 278) = 648.53, p < .001, \eta_p^2 = .7$ ], verifying the successful manipulation of unknown ingredient positioning. Similarly, the diagnosticity manipulation was checked by another ANOVA showing a significant main effect [ $M_{\text{HighDiagnosticity}} = 4.78$  vs.  $M_{\text{LowDiagnosticity}} = 4.36$ ;  $F(1, 278) = 8.91, p < .01, \eta_p^2 = .031$ ], providing verification for the manipulation.

### *Brand Trust and Ingredient Positioning Interaction*

First, I conducted an ANCOVA with brand trust and ingredient positioning as independent variables and product evaluation as the dependent variable, controlling for ingredient familiarity and phonetic effects. Phonetic effects and ingredient familiarity had no significant effect in the model, and thus were dropped from the model. An ANOVA with brand trust and ingredient positioning as independent variables and product evaluation as the dependent variable, revealed a significant

interaction between brand trust and ingredient positioning  $F(1, 276) = 7.62, p = .006, \eta_p^2 = .027$ . Moreover, ANOVA yielded main effects for brand trust  $F(1, 276) = 272.14, p < .001, \eta_p^2 = .496$  and ingredient positioning  $F(1, 276) = 26.96, p < .001, \eta_p^2 = .089$ . Under the high brand trust condition, the product evaluations were not statistically different for presence versus absence positioning ( $M_{\text{IngredientAbsent}} = 5.31, M_{\text{IngredientPresent}} = 4.98; F(1, 276) = 2.98, p = .102$ ). On the other hand, supporting H1a, under the low brand trust condition, the product with absence unknown ingredient positioning was evaluated significantly higher than the product with presence positioning ( $M_{\text{IngredientAbsent}} = 3.42, M_{\text{IngredientPresent}} = 2.32; F(1, 276) = 31.41, p < .001, \eta_p^2 = .1$ ).

#### *Moderated Mediation Analysis*

To once again test H2b, another moderated mediation (Hayes, 2017, Model 7) analysis was conducted that included ingredient positioning as the predictor (absent=0, present=1), product evaluation as the dependent measure (strongly disagree = 1, strongly agree = 7), with perceived risk (strongly disagree = 1, strongly agree = 7) as mediator and brand trust (low=0, high=1) as the moderator. In line with the findings in studies 2 and 3, presence positioning of the ingredient significantly increased perceived risk ( $\beta = 1.28, SE = .23, 95\% CI = .82 \text{ to } 1.73$ ), which negatively affected product evaluation ( $\beta = -.47, SE = .06, 95\% CI = -.57 \text{ to } -.35$ ). Once again, this indirect effect of ingredient positioning on product evaluation was significant in the low brand trust condition ( $\beta = -.59, 95\% CI = -.87 \text{ to } -.38$ ) but not significant in the

high brand trust condition ( $\beta = -.28$ , 95% CI =  $-.56$  to  $.06$ ). The mediation analysis show that perceived risk was significantly moderated by brand trust ( $\beta = -1.29$ , 95% CI =  $-1.75$  to  $-.84$ ). When perceived risk was added to the model as the mediator, the direct effect of ingredient positioning on product evaluation was not significant ( $\beta = -.28$ , SE =  $.18$ , 95% CI =  $-.64$  to  $.07$ ), indicating full mediation. These findings once again support H2<sub>b</sub>. Additional analyses (e.g. PROCESS Models 8, 14, and 15) did not reveal any significant mediation models.

### *Brand Trust, Ingredient Positioning and NFC Interaction*

To retest hypotheses H3<sub>a</sub> and H3<sub>b</sub>, following Cavanaugh (2014), I split the sample into two treatment groups: high versus low diagnosticity. Within the high diagnosticity condition, using the PROCESS Model 3 procedure (Hayes, 2017), I conducted a regression on product evaluation with brand trust, ingredient positioning and NFC, their two-way interactions, and the three-way interaction as independent variables, controlling for ingredient familiarity and phonetic effects. Phonetic effects and ingredient familiarity had no significant effect in the model, and thus dropped from the model. The overall model was significant ( $F(7, 131) = 21.04$ ,  $p < .001$ ). Once again, the two-way interaction between ingredient positioning and NFC ( $\beta = -.640$ ,  $t(131) = -2.03$ ,  $p = .044$ ) was significant. Critically however, once again, the three-way interaction was not significant. Furthermore, the data within the low diagnosticity condition was analyzed using a similar approach. Similarly, the phonetic effects and ingredient familiarity had no significant effect in the model, and thus dropped from the

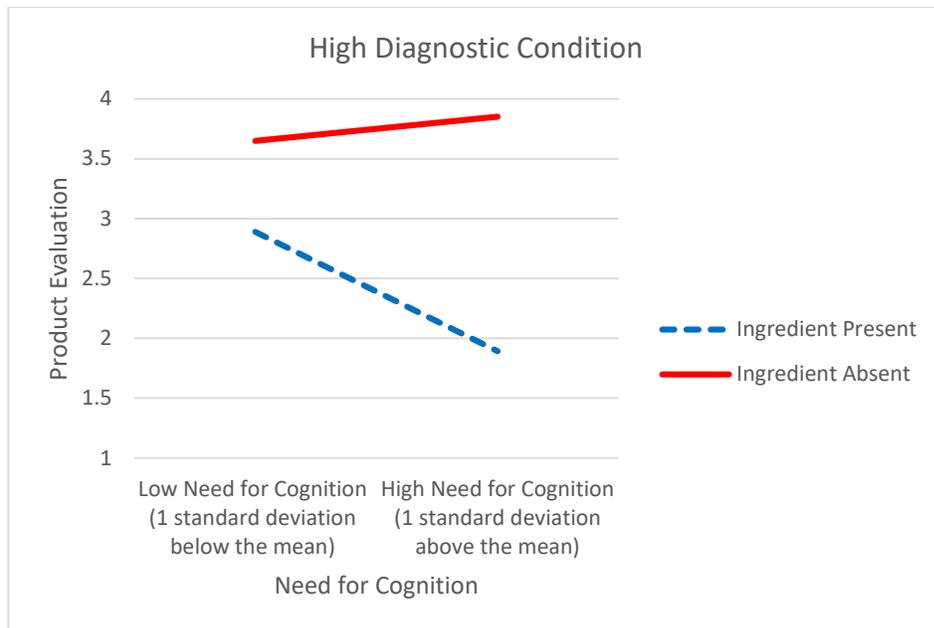
model. The overall model was significant ( $F(7, 133) = 27.55, p < .001$ ). However no other significant effect other than the main effects of ingredient presence/absence ( $\beta = -2.69, t(133) = -2.58, p = .011$ ) and NFC ( $\beta = -.42, t(133) = -2, p = .047$ ) was identified.

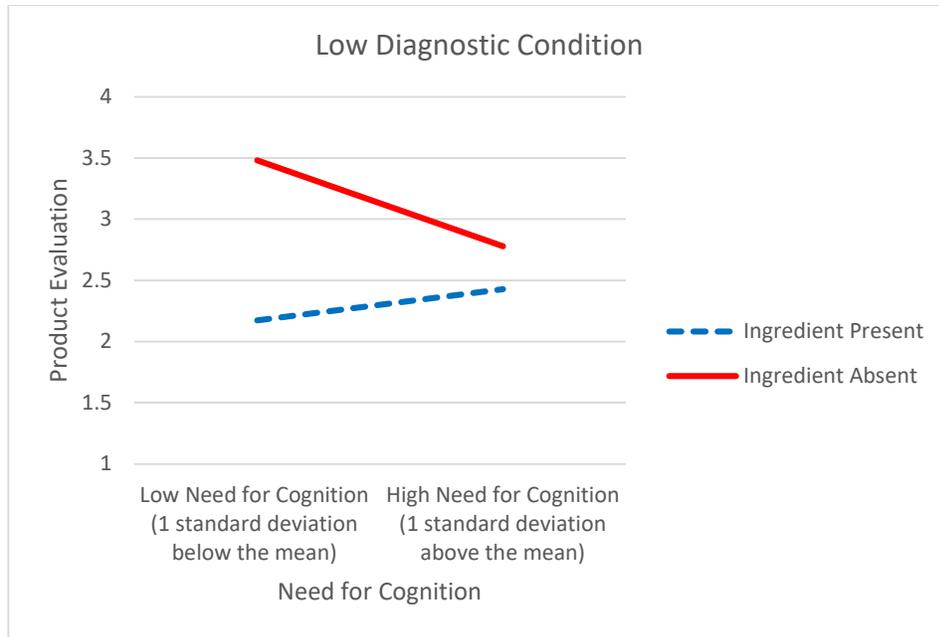
#### *Ingredient Positioning, NFC and Diagnosticity Interaction*

In order to test H4<sub>a</sub> and H4<sub>b</sub>, following Cavanaugh (2014), once again I split the data into two treatment groups: high versus low brand trust. Within the high and low brand trust conditions, using the PROCESS Model 3 procedure (Hayes, 2017), I conducted a regression on product evaluation with ingredient positioning (present versus absent), NFC and diagnosticity (high versus low), their two-way interactions, and the three-way interaction as independent variables, controlling for ingredient familiarity and phonetic effects. In the high brand trust condition, the analysis did not generate any significant effects, thus H4<sub>a</sub> and H4<sub>b</sub> were not supported. On the other hand, in the low brand trust condition, regression analysis yielded a marginally significant interaction between ingredient positioning and NFC ( $\beta = -.64, p = .055$ ). Moreover, the analysis generated a significant interaction between ingredient positioning and diagnosticity ( $\beta = -3.46, p = .039$ ). Most importantly, within the low brand trust condition, a significant three-way interaction was identified between ingredient positioning, NFC and diagnosticity ( $\beta = 1.21, p = .015$ ). Given the significant three-way interaction, I investigated the results separately in the two diagnosticity (high versus low) conditions using PROCESS Model 1 procedure

(Hayes, 2017). A 2 (ingredient positioning – absent versus present) x 2 (NFC – high versus low) analysis in the high diagnosticity condition revealed a marginally significant interaction ( $\beta = -.64, p = .079$ ). Furthermore, a 2 (ingredient positioning – absent versus present) x 2 (NFC – high versus low) analysis in the low diagnostic (ingredient list present) condition revealed a marginally significant interaction ( $\beta = .57, p = .085$ ) and main effect of NFC ( $\beta = -.41, p = .061$ ) in addition to significant main effect of ingredient positioning ( $\beta = -2.69, p = .017$ ). The directionalities observed in the two-way interactions are illustrated in Figure 3.4.

**Figure 3.4.** Product Evaluations as A Function of Unknown Ingredient Positioning and Need for Cognition Under Low Brand Trust Condition (Study 4)





### *Discussion*

Study 4 once again demonstrated that the effect of presence versus absence ingredient positioning on product evaluation depends on the level of brand trust. In line with previous findings, the analyses show that under low brand trust condition, participants evaluated the product with the absence message of the unknown ingredient ( $M_{\text{IngredientAbsent}} = 3.42$ ) significantly higher than the product with the presence message of the unknown ingredient ( $M_{\text{IngredientPresent}} = 2.32$ ). Moreover, in Study 4, I reconfirmed that this effect was mediated by participants' risk perceptions, such that, the indirect effect of ingredient positioning through perceived risk was significant in the low brand trust condition but not significant in the high brand trust condition.

In Study 4, I introduced an additional variable – diagnosticity of the ingredient information. Although in the high brand trust condition, the predicted three-way interaction between ingredient positioning (present versus absent), NFC and diagnosticity (high versus low) was not significant, and thus H4<sub>a</sub> and H4<sub>b</sub> were not supported, a significant three-way interaction was identified in the low brand trust condition. This identified discrepancy between the high and low brand trust conditions is in accord with the previous results. As stated before, the significant difference observed in product evaluations in the low brand trust condition appears as non-significant in the high brand trust condition. This finding suggests that, under the high brand trust condition, due to the reassurance provided by the brand, participants' risk perceptions are minimized so that they evaluate a product with an unknown attribute comparably to the one without an unknown attribute. Accordingly, once again, a similar effect was observed in Study 4, reflecting different results under the low versus high trust conditions.

In line with the previous discussion, these findings show that, the diagnosticity level of the ingredient information established by presence versus absence of additional information (i.e. ingredient list) interacted with NFC, such that in high diagnosticity condition people with high NFC evaluate a product with absence positioning significantly higher than a product with presence positioning. Conversely, in the low diagnostic condition, people with low NFC evaluate a product with absence positioning significantly higher than a product with presence positioning. According to the accessibility/diagnosticity theoretical framework (Alba et al., 1991; Keller et al.,

1997), a main message about the presence or absence of an unknown ingredient would be more accessible and diagnostic when presented without any extra information.

Therefore, a high (less) diagnostic message is expected to be more (less) effective and suitable for consumers who have a low level of NFC and prefer effortless thinking. On the other hand, when consumers are exposed to detailed information (e.g., an ingredient list) together with the main message about an unknown ingredient, the clarity of the main message is diluted and its diagnosticity level is lessened.

Consumers with high NFC would in fact need and make use of additional information while constructing their evaluations. Consequently, in Study 4, relative to the high diagnosticity condition, a main message about the presence of an unknown ingredient together with a number of other ingredients (low diagnosticity condition) generated better evaluations toward the product. Thus, particularly for the participants with high NFC, the effect observed in the high message diagnosticity condition was weakened in the low diagnostic condition, generating the identified three-way interaction between ingredient positioning, NFC and message diagnosticity level. These findings suggest that while lowering the diagnosticity level of the available information, presence of an ingredient list serve to cognition needs of people with high NFC and narrow the gap in their evaluations between products with absence positioning and presence positioning of an unknown ingredient.

## CHAPTER 4: DISCUSSION AND CONCLUSIONS

### *Discussion of Findings*

In this dissertation, I focused on consumer evaluations of products that highlight presence versus absence of ingredients that are unknown to consumers. Whenever producers develop new attributes or ingredients, they have to start promoting those new features starting from an initial point where consumers may have no knowledge of the nature and features of those newly introduced attributes (e.g. ingredients). It is a frequently observed packaging strategy in the marketplace to highlight presence or absence of newly developed and rather unknown attributes. As the front of a package has a very limited space to deliver distinct diagnostic information about the features of a product, producers strive to use that area as efficiently as possible. The studies in this dissertation collectively demonstrate that the binary positioning (presence versus absence) of a highlighted unknown ingredient significantly affects the product evaluations of consumers. In all of the four studies, I show that absence positioning of unknown ingredients predominantly leads to better product evaluations compared to presence positioning.

The findings of Study 1 provide evidence that, under the low brand trust condition, product evaluations are significantly better toward a product which emphasize the absence of the unknown ingredient (versus a product emphasizing the presence of the unknown ingredient). However, for a product with high brand trust, this effect did not produce a significant change in consumers' product evaluations that

are distinguished by presence versus absence accentuation of the unknown ingredient. The findings of Study 1 demonstrate that under the high brand trust condition, the disjunctive gap between the presence versus absence positioning of an unknown ingredient closes. This finding is robust as it was replicated in Studies 2,3 and 4.

In Study 2, the underlying factor in this observed interaction was investigated. In the mediation analysis, risk perception of the participants was identified as the process variable, such that, the indirect effect of ingredient positioning through perceived risk was significant when brand trust was low but not significant when brand trust was high. This finding shows that, high brand trust suppresses consumers' risk perceptions regarding the unknown ingredient by providing a significant level of reassurance.

In Study 3, an additional variable, need for cognition, was introduced to the model to investigate the possible interactions between ingredient positioning, brand trust and NFC. In Study 3, while replicating the previously identified moderation and mediation effects, the analyses of the three-factor model resulted with the identification of a two-way interaction between ingredient positioning and NFC as an additional finding, such that the effect of the binary unknown ingredient positioning is dependent upon the NFC levels of consumers.

Finally, in Study 4, in a nested design, I explored the interaction between unknown ingredient positioning, brand trust and diagnosticity level of the main

information while measuring the NFC levels of the participants. While confirming previous findings, Study 4 analyses generated a significant three-way interaction between unknown ingredient positioning, NFC and diagnosticity. Study 4 results show that under the low brand trust and high diagnosticity condition people with high NFC evaluate a product with absence positioning significantly better than a product with presence positioning. On the other hand, under the low brand trust and low diagnostic (ingredient list present) people with low NFC evaluate a product with absence positioning significantly better than a product with presence positioning. These results demonstrate that while lowering the diagnosticity level of the main message, presence of additional information such as a detailed ingredient list serve to the cognition needs of people with high NFC and close the gap in their evaluations between products with absence positioning versus presence positioning.

### ***Implications***

First and foremost, this dissertation contributes to the attribute positioning literature. In the previous literature, obscureness levels of product attributes have been researched in various ways. One of the seminal papers in that stream came from Carpenter et al., (1994) conceptualizing trivial attributes by defining them as attributes that perceived as valuable by consumers but actually are irrelevant to creating the claimed benefit. Those trivial attributes may be familiar to consumers to some extent, or may be completely fictional, created and named by producers. Previous research on

trivial attributes has shown that, even when consumers know that the attributes are irrelevant, they still are perceived positively, and improve product evaluations.

In the extant literature, positioning by product attributes has been investigated in two main streams, namely brand (operational) and strategic (market) positioning (DiMingo, 1988; Fuchs and Diamantopoulos, 2010; Ellson, 2004). Brand (operational) positioning is conceptualized as a firm's actions to create distinctive consumer perceptions about its products or brands (Crawford, 1985), whereas strategic (market) positioning is defined as a firm's distinct standing in the market in comparison to its competitors (Evans et al., 1996; Porter, 2008). When operational positioning is used, information about an aspect of the product itself (e.g. ingredients used) could be highlighted, which sometimes does not clearly translate into a tangible benefit in consumers' perceptions (Crawford, 1985). As an extension to operational positioning, another positioning strategy that is commonly used in the market place was recently introduced to the literature by Ozcan et al. (2018). In that paper, they point out producers highlighting presence or absence of unknown product attributes to influence consumer perceptions and product evaluations. Ozcan et al. (2018) report that, in general, consumers have more positive evaluations for a product that stresses the absence of an unknown attribute compared to its presence. However, in that research, they did not focus on how additional factors that consumers are commonly exposed to while examining a package would affect their perceptions shaped by the presence or absence positioning. One influential stimulus that consumers are simultaneously exposed to together with the ingredient information is the brand of the

product. Thus, this research sheds light on pending research questions and clarifies whether and how presence versus absence positioning of an unknown ingredient interacts with the brand trust level.

Second, in this dissertation, I identified perceived risk as the underlying factor in the observed present versus absent positioning and brand trust interaction. It was argued in previous literature that in order for brand trust to play an influential role in consumers' inference formation processes, consumers' risk perceptions should be activated (Andaleeb, 1992; Mayer et al., 1995; Rempel et al., 1985). In this dissertation, as an addition to previous literature on the relationship between brand trust and consumers' risk perceptions, I show that consumers' perceived risk levels mediate the interaction between attribute positioning and brand trust. I specifically demonstrate that, the indirect effect of unknown ingredient positioning through perceived risk depends on the brand trust level. This finding clearly identifies perceived risk as the process variable in the observed interaction between present versus absent positioning of unknown ingredients and brand trust.

Third, in this dissertation, I investigated the effect of a personal factor, need for cognition, within the realm of presence versus absence positioning of unknown ingredients. In the previous literature, Mantel and Kardes (1999) show that in presence of unfamiliar attributes, consumers depend heavily on their global attitudes and impressions about the brand as a focal source in constructing inferences. In that route, consumers depend primarily on peripheral cues and use an attitude-based strategy.

Alternatively, consumers may utilize an attribute-based strategy while shaping up their inferences on an unknown product attribute (Mantel and Kardes, 1999). When that approach is dominant, consumers pay more attention to details on functionality and nature of product features. Providing extension to previous findings on NFC as an influential personal characteristic, I show a significant interplay between NFC and the presence versus absence positioning of unknown ingredients.

Finally, this dissertation adds to the message diagnosticity literature. Due to the space limitations on a product package, there is only so much information producers can effectively convey to consumers. There is also a limit to consumers' cognitive capacity as well as their willingness to process provided information. Hence, exceeding that threshold may generate complications such as consumer confusion, fatigue or misinterpretation (Andrews et al., 2011; Newman et al., 2014). According to accessibility/diagnosticity theoretical framework (Alba et al., 1991; Keller et al., 1997), simple messages with less volume (e.g., one with a main message about presence or absence of an unknown ingredient) would be more accessible and diagnostic compared to more detailed and crowded messages (e.g., an detailed ingredients list presented together with the main message about an unknown ingredient). Accordingly, I show that the volume of the ingredient information presented on front of a package influences the diagnosticity level of the main message. Consequently, as detailed before, I illustrate an interaction between presence versus absence positioning of an unknown ingredient, NFC and message diagnosticity.

Managerially, this dissertation highlights consumers' sensitivity on contents of products they consume. The findings show that, in general, consumers prefer the absence of unknown and unfamiliar ingredients to their presence due to perceived risk. Thus, my findings show that promoting the absence of an unknown ingredient instead of its presence would be a safer strategy overall. However, the level of brand trust is identified as a significant variable in this equation as the gap between the product evaluations for presence versus absence positioning closes for brands with high trust levels. Accordingly, if managers find it necessary to introduce and promote new ingredients, my findings suggest that they should either use the highly trusted brands in their portfolio or use additional information on the packages to heighten consumers' brand trust perceptions. For that purpose, producers may use additional messages on their packages such as mentioning other consumers'/experts' trust, evaluations or testimonials. Similarly, awards and certifications granted to a brand (in a stamp format) may be used to increase the brand trust perceptions of consumers. Moreover, while deciding on the design of the front of package, product managers should pay attention to a personal factor, need for cognition, that influences effects of presence versus absence positioning of an unknown ingredient. They should keep in mind that some consumers have high need for cognition than others and would react to detailed information more favorably. Hence, managers should pay attention to the volume of information they present to consumers. Managers should recognize that the more information they share with consumers on the package, the less diagnostic becomes their main ingredient message. Thus, if they have to promote the presence of an unknown ingredient, to mitigate the adverse effects of presence positioning, they

would be better off by presenting their main message together with additional information such as a detailed ingredient list. In sum, product managers are advised to consider the implications of absence versus presence positioning of unknown ingredients, and its interactions with brand trust, NFC and additional information while using such messages in front of their packages, labels and other promotional materials.

### ***Limitations and Future Research***

As with many research studies, this dissertation is not without limitations. In this dissertation I used experimental, scenario-based stimuli without having consumers going through an actual shopping experience. The ingredient positioning information was not delivered by using an actual product label, as it would be in a natural shopping setting. In order avoid possible confounding issues, a scenario-based approach was used in brand trust manipulations. Future research may use real brands to operationalize the brand trust construct. Finally, I used an online panel with monetary compensation instead of collecting data from actual consumers who are making quick shopping decisions in the field. By addressing these limitations, future research may enhance the scope of my findings.

This dissertation attempts to shed light on how consumers respond to emphasis on presence versus absence of unknown product ingredients while taking into account a brand related factor –brand trust–, a personality factor –need for cognition–, and a

packaging factor –diagnosticity of the main message–. Taking into account the current consumer trends, –specifically the clean label trend–, how consumers evaluate ingredients of products appears as a promising field for future research. In this research, I specifically focus on absence versus presence positioning of unknown product ingredients as the main independent variable. Follow-up studies can be conducted to investigate some additional features of the ingredient positioning message such as its length, composition, place on package and even color used on its typography.

Similarly, an interesting future research topic would be investigating possible differential effects of alternative wordings that can be used in absence (presence) positioning of highlighted ingredients (e.g. “No triclosan” (“With triclosan”), “Triclosan free” (“Full of triclosan”),” and “100% free of triclosan” (“0% triclosan”). Moreover, various types of additional information on front of package could be operationalized to manipulate the diagnosticity construct in alternative ways. For example, if an ingredient list is to be presented together with the main ingredient message, would the volume of the list matter? Would the composition of the list, such as including more of known versus unknown or natural sounding versus chemical sounding ingredients have an effect on customer perceptions and evaluations? Investigating whether and how presence of different types of additional information such as healthiness claims, educational information, or expert opinions affect the relationship between the researched variables could be promising paths for future research. Answering these questions would be particularly important as space on

product packages is usually limited and, especially for instantaneous shopping decisions, the selective information conveyed on packages is highly influential and strategical.

In order to further the findings presented in this research, additional studies could be conducted using products that belong to other categories. In this research, the studies were conducted using an energy bar, processed food and cosmetics, which are all nondurable goods. Future research could investigate the presented findings using durable goods. Consumption methods of products such as whether the product touches the body, is eaten or the duration of consumption (i.e. one time versus continuous) might be additional influential factors. Furthermore, whether the product would be consumed by the shopper or someone else (e.g. bought as a gift for someone else) could also appear as differential variables. For example, it could be expected that if people are shopping for their loved ones such as their children, they might pay more attention to unknown ingredients and their presence versus absence. Finally, instead of using a scenario based experimental approach, future research may test the presented effects using field experiments to enhance the external validity of the findings.

## APPENDIX

### *Details of Scales*

Attitude toward Product (1-7):	Points: Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree Nor Disagree, Somewhat Agree, Agree, Strongly Agree
Study 1	“I like Energy Bar-A with/without/with/without rilol.” “Energy Bar-A with/without rilol is better.” “I am happy with/without Energy Bar-A with/without rilol.” “I would purchase Energy Bar-A with/without rilol.”
Study 2	“I find Hand Soap-A with/without rewum likeable.” “I find Hand Soap-A with/without rewum better.” “I find Hand Soap-A with/without rewum desirable.” “I would purchase Hand Soap-A with/without rewum.” “I find Hand Soap-A with/without rewum favorable.”
Study 3	“I find Ketchup-A with/without milol likeable.” “I find Ketchup-A with/without milol better.” “I find Ketchup-A with/without milol desirable.” “I would purchase Ketchup-A with/without milol.” “I find Ketchup-A with/without milol favorable.”
Study 4	“I find Shampoo-A with/without lorim likeable.” “I find Shampoo-A with/without lorim better.” “I find Shampoo-A with/without lorim desirable.” “I would purchase Shampoo-A with/without lorim.” “I find Shampoo-A with/without lorim favorable.”

Perceived Risk (1-7):  
Studies 2,3,4

Points:

Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree Nor Disagree, Somewhat Agree, Agree, Strongly Agree

“I am concerned that Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim could lead to some uncomfortable physical side-effects.”

“I am concerned about potential physical risks associated with Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim.”

“I worry that Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim will really not perform as well as it is supposed to.”

“I am concerned that Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim will not provide the level of benefits that I would be expecting.”

“The thought of purchasing Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim for use at home makes me feel psychologically uncomfortable.”

“The thought of purchasing a Hand soap-A/Ketchup-A/Shampoo-A with/without rewum/milol/lorim for use at home causes me to experience unnecessary tension.”

Product Capability (1-7):  
Study 2

“Hand Soap-A with/without rewum would:

Perform poorly/well; Offer few/a lot of advantages; Add little/a lot of value”

Brand Trust (1-7):  
Studies 1,2,3,4

Points:  
Strongly Disagree, Disagree, Somewhat Disagree, Neither Agree Nor Disagree, Somewhat Agree, Agree, Strongly Agree

“This is a trustworthy brand.”  
“This brand is predictable.”  
“This brand is dependable.”  
“This brand is reliable.”  
“This brand is truthful.”  
“This brand is competent.”  
“This brand has integrity.”  
“This brand is responsive.”  
“I rely on this brand.”  
“This is an honest brand.”  
“This brand is safe.”

Presence - Absence  
Manipulation Check  
(1-7): Studies 2,3,4

Hand soap-A/Ketchup-A/Shampoo-A does not contain rewum/milol/lorim / Hand soap-A/Ketchup-A/Shampoo-A contains rewum/milol/lorim

“What information did you receive at the beginning of the survey about Hand soap-A/Ketchup-A/Shampoo-A's ingredient content?”

Presence - Absence  
Manipulation Check (Binary  
[with/without/with/without]):  
Study 1

“Please choose the information you received in the beginning of the survey looking at the information about the ingredient rilol.”

Ingredient Knowledge  
Studies 1,2,3,4

“Please rate your knowledge on the following ingredients (rilol/rewum/milol/lorim) using a 7-point not knowledgeable at all and very knowledgeable scale.”



“It’s enough for me that something gets the job done; I don’t care how or why it works.”

“I usually end up deliberating about issues even when they do not affect me personally.”

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