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## COULD PERCEIVED RISKS EXPLAIN THE 'GREEN GAP' IN GREEN PRODUCT CONSUMPTION?

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According to Ottman (1998, p.89), “*green products are typically durable, non toxic, made from recycled materials, or minimally packaged. Of course, there are no completely green products, for they all use up energy and resources and create by-products and emissions during their manufacture, transport to warehouses and stores, usage, and eventual disposal. So green is relative, describing products with less impact on the environment than their alternatives.*” This definition fits a large range of products available on the market, such as natural cleaning products, footwear made from recycled inputs, recycled paper, no-chemical baby care products, and hybrid cars. Recently, we have witnessed an explosion of the market for green products (GPs) owing to a combination of consumer and industry infatuation with this type of product (Hopkins, 2009; Hartmann & Ibanez, 2006; Zaiem, 2005).

The latest study conducted by Terra Choice Environmental Marketing, stated that the proportion of GPs in North American stores jumped from 40 to 176% in 2008/2009 as compared with 2007. A recent study by Environmental Leader shows that over 80% of marketing executives intended to step up green marketing expenditures. On the demand side, increasing numbers of consumers are seeking to take an active stance in support of the environment through the purchase of so-called eco-friendly products (Dussart & Nantel, 2007; Follows & Jobbers, 2000; Troy & Anderson, 2000). For instance, 26% of consumers in France indicate that the purchase of eco-friendly products has become part of their regular consumption habits (Ethicity, 2010). In Canada, 94% of consumers state that it is important to honor the environment by purchasing green products (Environics Research, 2009). Similar trends are observed in China, India, and Singapore according to a report by TÜD SÜD Asia Pacific. The research demonstrated that the vast majority of consumers (84%) are prepared to pay a considerable premium (27% on average) to get products and services that are clearly certified as green ([www.tuev-sued.com](http://www.tuev-sued.com)).

At the academic research level, studies on environmental trends and green marketing have multiplied in recent years and point to growing consumer awareness (Chamorro, Rubio & Miranda, 2009). Marketing studies have focused essentially on organizations, and only a small number have looked at consumers in terms of their preferences, perceptions, behaviours, and motivations (Zaiem, 2005; Vitell, 2003; Rylander, 2001; Suchar & Suchar, 1994). However, a better understanding of consumer behaviour towards GPs is necessary given: (1) the exponential growth in GPs in all consumer sectors as a result of the ‘green shift’ adopted by many organizations; (2) the strategic marketing issues relating to the shift, notably brand and image management; and

(3) the ethical trends that appear to be impacting consumption (Chen, 2008; Chamorro & Banegil, 2006; François-Lecompte & Valette-Florence, 2006).

Despite GP enthusiasm and buying intentions, the actual consumption of GPs is still far from widespread (Mostafa, 2007) for three main reasons. First, most consumers remain sceptical about GPs, often owing to a lack of credibility and lack of confidence in the companies that market them (Lee, 2008). Many organizations use the green marketing fad and increased consumer awareness of matters relating to the environment for commercial ends by engaging in green spinning, green selling, green washing, green harvesting, enviropreneur marketing, and/or compliance marketing (Peattie & Crane, 2005). A 2009 survey conducted by Terra Choice on environmental awareness in North America showed that of 2219 products examined, all but 25 made claims that were demonstrably false or risked misleading intended audiences.

Second, some consumers are reluctant to buy GPs because of the risks they perceive in terms of quality, price, and lack of information, or because of uncertainty as to the place of GPs in society (D'Souza et al., 2007; Mahenc, 2007; Zaiem, 2005; Follows & Jobber, 2000; Suchar & Suchar, 1994). As Griskevicius, Tybur, and Van den Bergh (2010) suggest, consumers are reluctant to alter familiar patterns of behaviour since shifting to GPs often implies making some sacrifices. Third, there appears to be a green gap between pro-environmental attitudes and green purchase behavior (Gupta & Opten, 2009). A survey conducted by Le Monde de Cossette and Summerhill (online survey of 1000 Canadian respondents in July 2009) measured the green gap between Canadians' attributed degree of ecology and actual action taken in six different categories: energy, food, recycling, reuse, fuel performance, and green product preference. Findings point to a considerable green gap of 40% between self perception and actual action taken to improve the environment. On this point, findings by the Government of France are equally telling. According to the Secretary of State for Ecology Chantal Jouanno, 'although a full 20% of French consumers stated that they were eco-consumers and 79% stated that they were ready to consume responsibly, only 4% actually did so!' ('Vision durable', January 2010, p. 38). This phenomenon could be explained for reasons relating to status, reputation and altruism. For Griskevicius, Tybur and Van den Bergh (2010), there are important links between displays of caring, environmental behaviour and competition for status. According to Gupta and Ogden (2009), the attitude/behaviour gap in environmental consumerism exists because it represents a social dilemma for consumers.

Although these issues are important, there has been little research to date examining consumer reluctance in adopting GPs, particularly regarding the role of perceived risks. As Chamorro, Rubio and Miranda (2009 p. 233) indicate: "*Studies analysing green consumers will continue to be attractive as environmental consciousness evolves over time. The findings of studies from previous years will not necessarily be valid in the future. New research on this topic should aim to identify possible developments in consumer attitudes, intentions and behaviours.*" Yet academic literature stresses the extent to which various perceived risks act as impediments to the consumer decision-making process. Furthermore, like other innovations, the development of GPs is

characterized by a high level of risk and uncertainty (Chen, 2001). Why do people purchase or choose not to purchase GPs? Could perceived risks towards GPs be one of the explanations for the green gap? For Zaiem (2005), green product success is reliant in part on consumer sensitivity and concern over environmental issues in general.

Hence the purpose of this article is to understand whether some attributes or aspects of GPs impact perceived consumer risks. For the purposes of the study at hand, a means-end chain (MEC) approach is used to explore the links which consumers establish between the attributes, consequences and perceived risks of GPs. Section 1 introduces the key concepts of the research (the green consumption phenomenon and perceived risks). Section 2 presents the methodology and the key findings in relation to five perceived risks are exposed in section 3. A discussion and conclusion are found in section 4.

## **1. Conceptual background**

This section presents a brief background of the green consumption phenomenon followed by a review of the theory in perceived risks.

### **The green consumption phenomenon**

Research specifically exploring green consumption behaviour has gained in popularity since the mid-1990s (Chamorro, Rubio & Miranda, 2009; Gupta & Ogden, 2009). According to a study conducted by French-based Ethicity in 2006, 77% of people felt that responsible consumption meant consuming better, which is to say consuming products labelled and certified as ethical and products which generated less pollution. Consumer pressure has forced organizations to introduce so-called green alternatives into the marketplace (D'Souza et al., 2007; Zaiem, 2005). A green market has thus emerged as green producers and retailers seek to meet the expectations of the socio-demographic segment of green consumers (Hartmann & Ibanez, 2006).

GPs must boast some attributes such as eco-friendly production processes, organic content, reduced environmental impact, recycling, use of non-toxic materials and reduction in packaging (Roarty, 1997; Wasik, 1996). Along with these criteria, there are a number of moderators which explain green consumption behaviour, including environmental awareness or consciousness, demographics, psychographics, culture, political ideology, collectivism value, brand preference, personal standards, perceived barriers, an affinity for nature, and cost-benefit analyses. In fact, green consumers pursue a number of objectives, such as protecting the climate, opposing non-renewable energy sources, and promoting renewable energy (Hopkins, 2009; Hartmann & Ibanez, 2006; Tsen et al., 2006; Zaiem, 2005; Bahn & Wright, 2001). According to Rylander (2001), green consumers are developing attitudes (mediating roles for all effects on purchase intentions) about environmental issues which are influenced by an extensive set of social and personal factors (standards, values, knowledge, personality, socio-demographic variables). Green purchase intentions are moderated either by internal

variables (e.g. cost sensitivity, trust in advertising, perception of effectiveness) or external variables (required effort, appropriateness, rewards/punishments). The challenge thus seems to lie in knowing “*how to identify and effectively market environmentally friendly products to green consumer segments*” (Gupta & Ogden, 2009, p. 376). For researchers, it is a matter of being able to assess whether or not environmental attitudes are predictive of purchase behaviour (Gupta & Ogden, 2009).

GP marketing is complex because it must achieve two goals: improve environmental quality while satisfying consumers (Ottman, Stafford & Hartman, 2006). It is thus crucial to understand that when consumers consider buying a GP, aside from taking into account the fact that the product is indeed green and well received socially, they also examine and assess functionalities and performance (D’Souza et al., 2007). One important issue nonetheless remains: many GPs available to consumers are either new products or products which incorporate innovations and result in riskier buying situations. As a consequence, the perceived value and risks associated with GPs differ from one consumer to the next based on a number of variables.

### **Perceived risks**

Perceived risks stem from uncertainty about the potentially negative consequences associated with a choice (Laforet, 2008). Bauer (1960), the first to address this concept, states that consumers cannot anticipate with certainty the consequences of a purchase, hence the existence of a risk. He defines risks based on two aspects: (i) *uncertainty* which represents something about which the consumer is not certain. In the case of a product (price, technical specifications, etc.) or a situation, uncertainty will be fairly important and will impact consumer choice; (ii) *consequence* which is identified through five types of losses: financial loss, performance loss, physical loss, psychological loss and social loss (Aqueveque, 2006). Consumers view a purchase situation as risky when they feel that there is a high probability that negative consequences will arise or, inversely, a low probability of positive consequences (Mitchell & Harris, 2005).

Most studies (e.g. Veloutsou & Bian, 2008; Snoj, Pisnik & Mumel, 2004; Stone & Mason, 1995; Peter & Ryan, 1976) take a multidimensional approach to the concept based on six factors: (1) *functional*: risk that a product does not work, does not work properly or does not work in the manner in which the consumer would like it to work; (2) *financial*: risk of losing money with the new product or risk of investing more money than one can expect to receive in return; (3) *temporal*: risk that the consumer loses time while looking for a product; (4) *physical*: risk that the consumer injure him/herself or others through the use of the product; (5) *psychosocial*: risk of choosing a bad product which could have a negative impact on the consumer’s ego or the consumer’s status with respect to friends, family and/or colleagues.

The concept of perceived risk is determinant because consumers perceive risk in virtually all purchase decisions (Doolin et al., 2005). Given the specificities of GPs and green consumption, it is worthwhile determining whether there are perceived risks associated with the purchase of this type of products. A better understanding of these

perceived risks could also be helpful in understanding the reasons behind the existence of the green gap in green product consumption.

## 2. Methodology

### Means-end chain approach

To meet our objective of understanding whether some attributes or aspects of a GP can influence the various risks perceived by consumers, we used the means-end chain (MEC) technique. Originally developed by Gutman (1982), this approach postulates that very specific product attributes are linked to increasing levels of abstraction. It is a qualitative method based on structured interviews (McDonald, Thyne & McMorland, 2008). *“It is a model that seeks to explain how a product or service selection facilitates the achievement of desired end states.”* (Gutman, 1982, p. 60). The following diagram illustrates the MEC principles as proposed by Mitchell and Harris (2005).

Product attributes → Consequences → Motivations → Perceived risk dimensions

Through a technique called laddering, consumer associations between specific attributes and general consequences are brought to light. The study entails the use of qualitative interrogation techniques to establish the link between aspects which influence, affect or predict events or outcomes (Ennis, 1999). This approach reveals the associations which consumers make between specific attributes, their functional or psychological consequences, and even their values (Wang, 2008). This analytic approach has been used in prior research with success in various sectors such as for understanding the factors influencing the choice of ski destination choice (Klenosky, Gengler and Mulvey, 1993), exploring baby-boomer financial goal structures (Johnson, 2008) and understanding smoker’s perceptions of cigarettes (Kaciak, Cullen and Sagan, 2010). This method is more appropriate than the traditional multi-attribute models of choice because it makes it possible to link GP attributes to the consequences they have on the motivation to purchase this type of product. The traditional multi-attribute approach is based on an explicit evaluation of the importance of attributes in the decision process. As a result, marketing choice models such as the multi-attribute one tend to overstate the importance of product attribute and ignore the personal connections consumer’s makes at higher levels with products (Phillips and Reynolds, 2009; Walker and Olsen, 1991). In contrast, the MEC concentrates on why and how an attribute is important and allow the possibilities to uncover the deep drivers of consumer decision-making (Phillips and Reynolds, 2009) and link it with perceived risks, which has never been investigate so far in the scientific literature.

### Data collection

For this exploratory study, two groups of ten members recruited by announcement met in a genuine focus group room (tinted windows, video and audio recording) in a Canadian city for a period of 90 minutes. Such qualitative in depth research, unlike positivist research, cannot be run on a large scale sample because of the time consuming process associated with it. The final sample comprises a half and half mix of

men and women aged between 25 and 65 from various social and occupational categories such as students, engineers, teachers, with average annual incomes ranging from C\$40 000 to C\$100 000. We used a discussion guide which contained 29 questions designed to address the themes of green consumption, GPs and the perceived risks associated with the latter. A line of phosphate-free, biodegradable household cleaning products provided by a Canadian company was used as green test products.

## **Data analysis**

Owing to the qualitative nature of the data, the content analysis method was applied in this study. The focus group data was first processed by theme using a summary analysis before being submitted to the consumers interviewed for validation. Following the content analysis, all associations were analysed by two independent judges in order to identify the different linkages. All disagreements between the two coders were resolved jointly. Based on those linkages, one can draw a hierarchical value map (HVM) which is a standardized and easy-to-interpret presentation of the aggregated interviews (Whitlark and Allred, 2003). To determine the cut off level of the linkage, we used the solution of Reynolds and Gutman (1988) which suggests that 70 percent of the implications should be represented. The data was then compiled using the MEC technique based on the following five perceived risks: temporal, psychosocial, functional, financial, and physical. Using the MEC approach, perceptual maps (See figures 1, 2, 3 and 4) were drawn to show the relationships among attributes, consequences, motivations and the five perceived risks associated with GPs.

## **3. Key Findings**

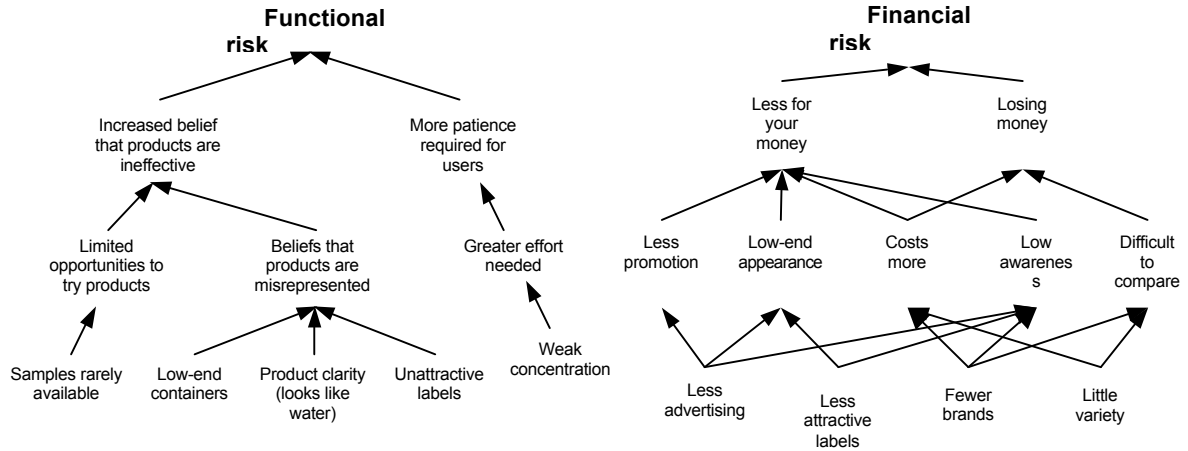
### **1. Functional risk**

Ineffectiveness and the need to work harder to achieve results were the main negative motivations associated with the functional nature of GPs. Attributes such as unattractive labels, content of products that look like water, and low-end packaging left consumers with a bad impression, increased the sense of ineffectiveness and, by the same token, enhanced the degree of perceived functional risk: "*I do not trust GPs.*" Participants also mention that the lack of samples to try out the products before they buy the products as a negative motivation.

### **2. Financial risk**

The attributes associated with financial risk included less promotion, less attractive labels, and the limited number of brands and product lines. For instance, limited product lines make it difficult to compare products and therefore result in more expensive products. Consumers feel that they are getting less for their money (financial loss) since they perceive that green products cost more than traditional products.

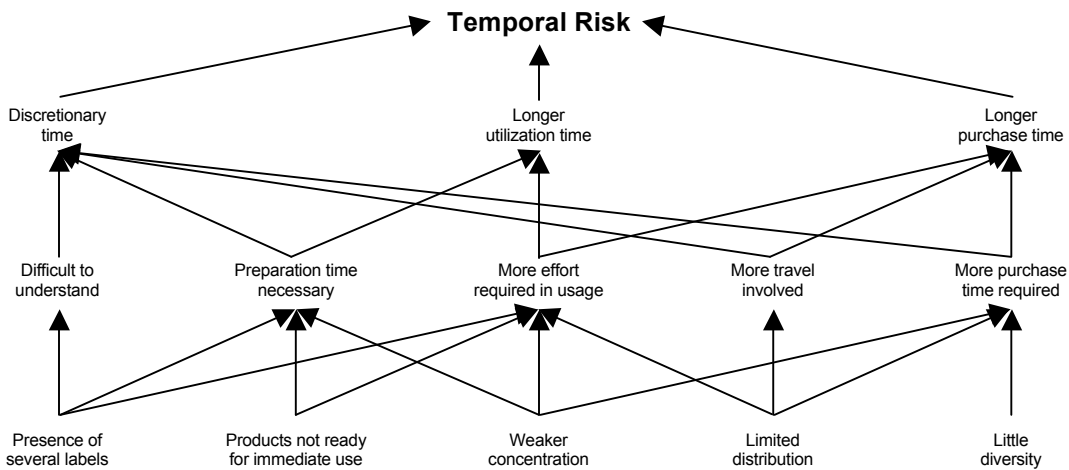
**Figure 1: Functional and Financial Risks**



**3. Temporal risk**

The main attributes and motivations for purchasing GPs affected by temporal risk were limited discretionary time, longer utilization time, and longer purchase time. Respondents seemed to find it difficult to procure GPs from retailers—“*They’re just really hard to find!*” (availability problems)—thereby entailing more travel time than when purchasing conventional products: “*Big chemical companies have a bigger marketing budget than the smaller companies which make GPs, so conventional products are better distributed and easier for us to find.*” The temporal risk is also related to the fact that green products are perceived as less efficient (weaker concentration) so that consumers need to spend more time when using them to get similar results than with traditional products.

**Figure 2: Temporal Risk**

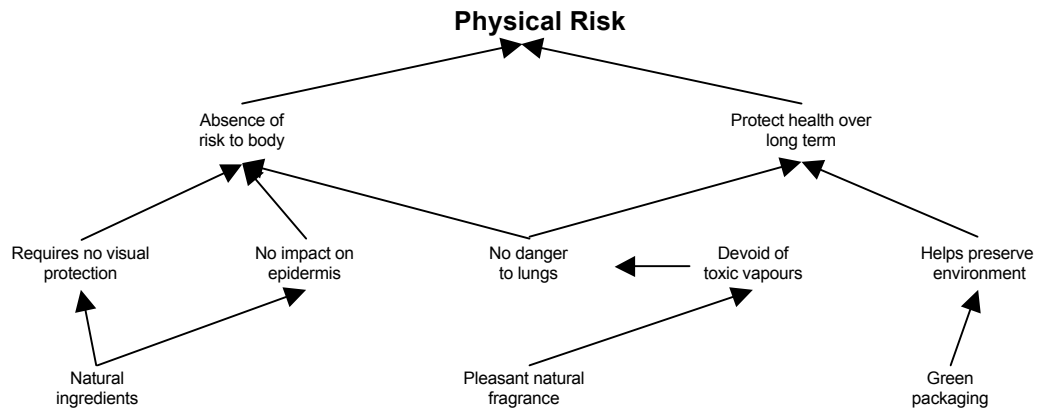


**4. Physical risk**



Respondents did not perceive any physical risk associated with the use of GPs. On the contrary, physical risks were associated more with non-GPs: *“The fumes from chemical products are crazy. And it’s obvious that the residue they leave on the counter can have an impact on health. It smells so strong that you know it can’t be good. It’s toxic and I can’t imagine the long term hormonal and skin problems they can cause.”* The main motivation for purchasing GPs was the absence of long term risks to the body and human health. Attributes such as natural ingredients, green packaging, and pleasant natural fragrance reassured consumers.

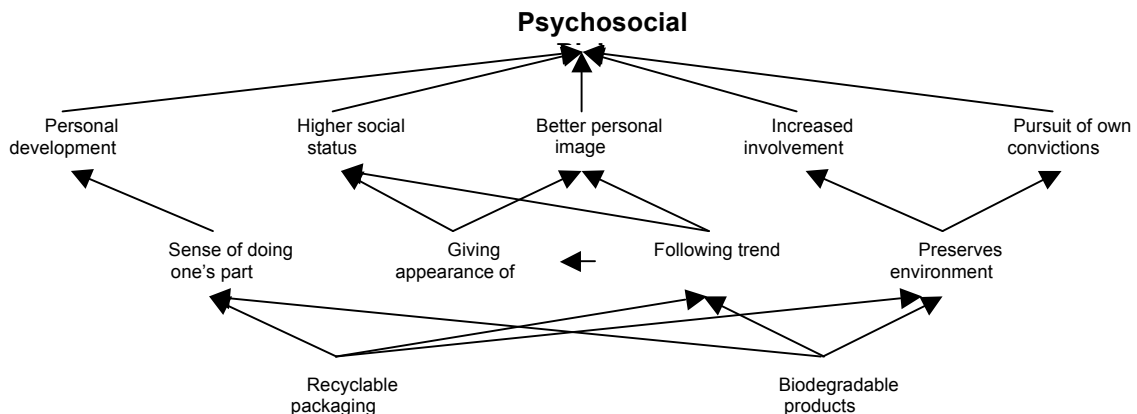
**Figure 3: Physical Risk**



## 5. Psychosocial risk

Paradoxically, it would appear that there are no perceived psychosocial risks (or psychosocial risks) associated with the purchase of GPs. On the contrary, products that are biodegradable or packaged using recyclable materials had a positive impact on respondents, generating feelings of doing one’s part, following a trend, giving the appearance of being a good person, and helping preserve the environment. These consequences were echoed in all the motivations associated with this risk, including personal development, higher social status, better personal image, increased involvement and pursuit of own convictions.

**Figure 4: Psychosocial Risk**



#### 4. Discussion and managerial implications

The primary theoretical contribution of this exploratory study lies in the analysis of all perceived risks relating to green product consumption. Our findings are largely in line with those of François-Lecompte and Valette-Florence (2006) and point to a disconnect between high consumer enthusiasm for adopting ethical consumption and their actual daily purchasing behaviour. This discrepancy may be explained by a desire to avoid a social desirability bias, lacking information in terms of true corporate behaviour, and, of course, the price factor and other elements such as limited product availability and purchase complexity.

The findings of this study show that consumers perceive negative risks based on GP attributes, specifically with regard to the functional, financial and temporal aspects of GPs. Conversely, they perceive risks deemed positive when it comes to physical and psychosocial aspects.

Previous results from the literature point up, as the present study, to negative a functional risk with respect to green product consumption. Carrigan and Attalla (2001) indeed identify functional risk (i.e. lesser quality products) to explain the refusal to purchase ethical products. On this point, the findings of Rodriguez-Ibeas (2007) are particularly worthwhile to note: *“‘Green’ consumers value the physical and environmental attributes of the good they purchase while ‘brown’ consumers value only the physical attributes. As Griskevicius, Tybur and Van den Bergh (2010) indicate, from a rational economic perspective, an effective way of motivating consumers to purchase GPs is to make more efficient GPs.*

When it comes to financial risk, current academic literature is non-corroborative. While some studies conclude that price is not the main obstacle to the purchase of green products (Tanner and Kast, 2003; Hopkins, 2009), a greater number of studies seem to substantiate the findings of this study with respect to perceived consumer risks in terms of GP pricing which is deemed to be too high. Price resistance indeed represents a major roadblock to increased demand for GPs (Zaiem, 2005). Numerous trade studies bear this out: one conducted by Environics Research in 2009 reveal that 66% of Canadians considered eco-friendly products to be too pricey; the same is true in France where in a 2010 study by Ethicity, 83% of the French found eco-responsible products more costly than conventional products. Furthermore, D’Astous and Legendre (2009) demonstrate that, when it comes to responsible consumption, economic considerations have the greatest impact on the decision to purchase or not to purchase so-called eco-responsible products. From a rational economic perspective, an effective way of motivating consumers to purchase GPs thus seems to be to reduce the price of GPs (Griskevicius Tybur & Van den Bergh, 2010).

The identification of a temporal risk seems to be in line with the conclusions of existing literature on GPs. Perceived time barriers restrain one's motivation to buy GPs. The extent of people's green food purchases decrease when people perceive a need to save time, and when they shop mainly in supermarkets (Tanner & Kast, 2003). In addition, a study carried out by Environics Research in 2009 reveals that 59% of Canadians

consider eco-friendly products hard to find. Another study by BCG in 2009 points up that 16% of US consumers feel that there are not enough GP options and that 10% do not know where to find them (Hopkins, 2009).

The absence of physical risks for GPs had not been noted in the literature. However, the fact that the psychological risk is positive may be explained using the concept of social desirability. Indeed, in a recent study, Griskevicius, Tybur and Van den Bergh (2010) show that GPs offer an important status-enhancing reputational benefit. People derive enhanced self-image from purchasing GPs. This self-image benefit enhances an individual's beliefs about the external benefits of choosing green, and in the personal responsibility one feels with respect to the issue (Nyborg, Howarth & Brekke, 2006).

A combined analysis of the perceived risks made it possible to identify some attributes and motivations which support the purchase of green cleaning products (pleasant fragrance, natural ingredients, recyclable packaging, lack of health risks, protection of the environment, improvement of personal and social image) as well as those that hinder it (limited distribution, weaker concentration, less attractive label, higher cost, longer and more complex purchasing process, product ineffectiveness). The attributes which emerged in this study can be grouped into four categories: (1) *intrinsic characteristics* (product ingredients and appearance); (2) *extrinsic characteristics* (packaging and product lines); (3) *marketing characteristics* (promotion, advertising, or public relations); and (4) *distribution characteristics* (locations where products are available).

Knowing how GP attributes relate to risk is useful for retail marketers seeking to develop and position GPs. In this regard, recent research by Pickett-Baker and Ozaki (2008) reveal findings which were similar to ours. According to their study, most consumers are unable to clearly identify GPs and do not consider product marketing to be engaging or helpful.

First and foremost, it would appear to be in the best interest of organizations to concentrate on providing information about their products to consumers. Indeed, 74% of French consumers are in favour of enhanced product information (Ethicity, 2010). For Zaeim (2005), consumers must be persuaded by means of better product information. However, Mahenc (2007) demonstrates that the information provided by green producers, such as 'organically grown', 'biodegradable' and 'packaging containing at least 50% recycled materials', is difficult for consumers to verify. According to Tremblay (1994), 22% of consumers are unable to suggest a definition for ecological product. Additionally, according to a study conducted in France by LH2<sup>1</sup>, 50% of respondents do not purchase eco-friendly products because they find it difficult to ascertain whether or not the products were indeed eco-friendly.

Hence D'Astous and Legendre (2009) as well as Hartmann and Ibanez (2006) recommend providing consumers with detailed information, notably through information programs on responsible consumption, the aim being to educate consumers. From the

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<sup>1</sup> LH2, (2008), 'The French and Sustainable Consumption'

perspective of environmental concern, Griskevicius, Tybur and Van den Bergh (2010) advocate spurring green behaviour through an effective strategy designed to better inform consumers about the plight of the environment.

Also, Hartmann and Ibanez (2006) advise companies to use marketing and advertising to associate their brands with personal emotional benefits for green consumers, thereby enhancing overall perceived value. Green brands must elicit positive emotions in certain target groups through the provision of information on the environmental attributes of the products of offer. For Gupta and Ogden (2009), it is important for marketers to emphasize the impact that individual action can have on the collective good. D'Astous and Legendre (2009) recommend that marketers add an emotional dimension to GPs to enhance overall prestige and symbolism, and render any price differential more acceptable. It is important to understand that some consumers are willing to pay more for GPs, not primarily out of concern for the environmental impact of their choices, but rather to feel better about themselves and to take the moral high ground in society (Menges, 2003). In fact, willingness to pay a green premium depends on product category and perceived benefits (Hopkins, 2009).

According to Mahenc (2007), when consumers cannot ascertain the environmental performance of products, the price must be distorted upward to signal the greenest of the product. On this issue, Griskevicius, Tybur and Van den Bergh (2010) recommend, in the case of more costly GPs, that such products be clearly linked to status through the use of celebrity endorsers or the organization of prestige events. Gupta and Ogden (2009) concur: use spokespeople who are perceived as role models for green behaviour. Other actions may include investing in upscale packaging (D'Astous & Legendre, 2009).

### **Limits and future research**

Considering the exploratory nature of our research into GPs, further studies could be conducted with a view to building on the following: (1) Weighting GP attributes to identify their importance in terms of impact on the purchase decision process; (2) The use of two samples: the first made up of consumers who use green products and the second comprising consumers who use conventional products. Such a study would make it possible to observe different perceptions of the consequences and motivations in each of the two categories of respondents; (3) The use of other qualitative methods such as cognitive mapping which facilitates the exploration, understanding, transformation and/or confirmation of ideas expressed by consumers (Cossette, 2003); (4) Cross-cultural comparisons with other Anglo-Saxon and non-Anglo-Saxon countries; (5) A test of other types of GPs (e.g. food, clothes, manufactured products) to substantiate the findings; (6) An experiment to see whether usage has a positive or negative impact upon consumer perceptions in relation to functionality and financial outlay, and whether this positively or negatively impacts their willingness to purchase and/or seek out such GPs; and, (7) A study focusing on the green gap.

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