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Inverse Effects of Information: The Influence of Personality Congruence on Preference for High Technology Products

Yong Seok Sohn*
Sung Eun Kim**

In today's society with its emphasis on unlimited information access, control of available information about high-technology products is often vital to their success. When a product is released, consumers may initially be attracted through information about its remarkable internal and external features. They may also perceive a degree of congruence between their own personalities and the product image as more information becomes available over time. Consumers' changing impressions of the product may influence personality congruence negatively or positively. These changes and their effects on preference for high-technology products are the focus of this paper.

A survey was given to a sample of 206 students at K University to investigate the degree to which consumer behavior can be influenced by personality congruence. The need for clear and definite product knowledge in this process and the effect of product information on preference were also investigated. Three analyses were conducted. The results of Analysis 1 showed the influence of personality congruence on preference for high-technology products. Judgments about personality congruence were based on non-compensatory rather than compensatory information processing. The respondents considered certain aspects of a product's personality rather than the product as a whole when making preference decisions. The results of Analysis 2 indicated that when less information was available about a product, consumers who perceived high personality congruence with the product tended to have higher preference for it compared to those who perceived low personality congruence with the product. On the other hand, when consumers were given more information, no difference was observed in the impact of personality on preference between perceived high and low personality congruence. Lastly, the results of Analysis 3 showed that when consumers with high need for closure (NFC) perceived high congruence between their own personalities and a product, objective information regarding the product was not used in decision-making; instead, judgments about the product were based on perceived personality congruence. On the other hand, high-NFC consumers who perceived

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low personality congruence between themselves and the product tended to require more information about the product in order to give it a positive evaluation. In contrast, low-NFC consumers who perceived high personality congruence felt comfortable with large amounts of information. For low-NFC consumers who perceived low congruence, the level of information had no influence on preference.

Key words: less information, personality congruence, high-tech products, need for closure

I. Introduction

In our daily routines, we evaluate the products that we encounter. Judgments are made through personal observation and consideration of the opinions of others about these products. We also evaluate ourselves and our own performance in our day-to-day lives. When making judgments of self compared to others, people tend to rate themselves as above average. Self-assessments are more positive than judgments provided by others (Felson 1981). People tend to evaluate themselves positively and say fewer negative things about themselves when compared to what others say about them (Dunning, Meyerowitz and Holzberg 1989). This positive self-promotion is evident in the products they purchase. This paper argues that it is even more evident if less information is available and if the products are equipped with novel, high-technology devices. Consumers prefer products that reflect their self-image or mirror their various personality traits. They may imagine more congruence between the products and themselves when less

information is provided. On the other hand, as they learn more about the products, they may perceive less congruence between themselves and the products.

Self-congruence is the match between self-image and product image (Sirgy 1986). We tend to possess objects that reflect our identities (Belk 1988), symbolize us as individuals, communicate meaning, and enable us to express ourselves (Grubb and Grathwohl 1967). Brands are often used as vehicles to express self-identity (Aaker 1996). For example, if Samsung and Apple are brands strongly associated with sincerity, consumers that value sincerity may be assumed to purchase products from either company. However, other traits associated with one of these brands may not be congruent with their personalities, and they may therefore choose to purchase a product from the other company, which they perceive as more closely reflecting their self-image. The degree of self-congruence in this situation is therefore high, as the self-image and product image are perceived as well-matched.

In today's society, information is easily accessible. However, many high-technology products are

released with limited accompanying information. Despite this lack of information, high personality congruence may still be perceived. This phenomenon has been observed in situations where very little information is provided about a newly launched product: only the product image is available to aid in decision-making. In this circumstance, consumers who have less information about the product may perceive high personality congruence between their self-image and the product image. In contrast, more information allows easy categorization of high-tech products. In this situation, personality congruence is not used for product evaluation and decision-making. The perceived level of personality congruence may therefore differ depending on the amount of information released.

The large number of emerging high-technology products and rapid pace of the industry have resulted in a lag in research on consumer response to the many new technologies available in today's markets. Human personality interaction has been studied widely, but few studies have investigated the relationship between human personality and product personality through the use of the Brand Personality Scale (BPS) (Aaker 1997). The purpose of this paper was to investigate the concepts of self-image and product personality, the amount of information released about a product, consumers' desire for that information, and the relationships between these concepts and consumer preference. We examined whether high congruence between

self-image and product personality can have a positive influence on preference. In addition, consumer information processing may be executed in a compensatory (weighing all alternatives to form an overall impression of the product) or non-compensatory (choosing among alternatives according to a single most important attribute) manner. This study investigated consumer processing and information matching, determining the compensatory or non-compensatory nature of its execution utilizing the BPS. The type of information processing involved in the associations among self-image, product personality, and product preference (compensatory or non-compensatory) was also examined. Various levels of information provision were investigated. Finally, we determined the influence of self-image and product personality on preference depending on consumers' need for closure (NFC).

II. Conceptual background and hypotheses

2.1 Personality Congruence

Products are characterized in the minds of consumers in response to available information. For example, they may perceive Oil of Olay products as "gentle" or Holiday Inn services as "cheerful" because of the way these products

and services are depicted in advertisements. Consumers then reflect upon their own self-image, which may include actual self-image, ideal self-image, social self-image, and ideal social image (Sirgy 1982), and attempt to reconcile that image with the perceived characteristics of the product. Consumers prefer a specific product because they see themselves as similar to the kind of people that are generally thought to use it (Sirgy 1982). This concept is called self-congruence, and it is defined as the match between self-image and product image (Sirgy 1986). The objects we possess reflect our identities (Belk 1988): they symbolize the individual, communicate meaning, and express the self (Grubb and Grathwohl 1967). The intentions behind a purchase thus relate to self-expression.

Marketers create images for their products so consumers can relate or form attachments to these products in relation to their own self-image. To a certain degree, women can buy cosmetics to reflect how they would like to appear rather than what they actually look like. Consumers often buy products that are perceived to relate to their own self-concept (Graeff 1996). For example, convertible owners are perceived as more active, impulsive, and dominant in their behaviors compared to owners of compact and standard model cars (Westfall 1962). Individuals can define themselves by choosing products with particular image associations. Previous research has indicated that self-image

congruence can affect consumers' product preferences (Ericksen 1996, Dolich 1969, Grubb and Huppo 1968). Owners of one brand of automobile identify more strongly with those who own an automobile of the same brand compared to those who own a different brand (Grubb and Huppo 1968). We communicate with others by expressing ourselves through the personalities of the products we buy, which in turn enhance our self-image. Therefore, products are symbols through which we portray ourselves to others (Solomon 1983).

In today's society, products are designed for more than functional utility. Consumers associate with them in various ways through different forms of perceived congruence between themselves and the product image. Congruence between the product image and a consumer's actual image has a positive influence on consumer preference, purchase intention, and satisfaction (Birdwell 1968, Dolich 1969, Levy 1959, Malhotra 1981, Sirgy 1982). Greater congruence between the product image and a consumer's actual self-image results in a positive attitude toward the product (Sirgy 1982, 1985). Consumers who felt that a product symbolized them reported more attachment to the object than those who felt that the product did not symbolize them (Kiesler and Kiesler 2005). Consumers want to sustain and improve their self-concept through the products that they purchase or intend to purchase.

Ogilvy (1983, p.14) stated that "products, like

people, have personalities". Individuals prefer brands whose personalities are closely related to their own self-image (Schiffman and Kanuk 2000). Consumers express themselves by choosing brands whose personalities are congruent with their own personalities (Sirgy 1982, Kassarian 1971). They seek products whose personality harmonizes with the way they present themselves. Brand personality influences consumer preference and self-expression (Belk 1988) and is related to the concept of the ideal self (Malhotra 1988).

This discussion of the conceptual background about the relationship between consumers' personalities and brand personality leads to the following hypothesis:

H₁: Personality congruence will have a positive influence on consumer preference.

2.2 Compensatory and Non-compensatory Information Processing

Different decisions require investment of different amounts of cognitive effort (Wright 1975). Compensatory information processing involves weighing of the differences between data so as to form an overall product impression (Anderson 1973). Compensatory decisions are rational decisions that involve identifying a complete set of attributes and assigning relative importance to each attribute. On the other hand, non-compensatory information processing does not

require systematic collection of all the relevant information. Non-compensatory information processing requires choosing among alternatives according to a single most important attribute (Broder and Schiffer 2003). When consumers are less acquainted with a product category, they make non-compensatory decisions. When less information is available, consumers may prefer non-compensatory information processing, which allows elimination of alternatives without examining all attributes. Due to the lack of information about the brand personality of the product, specific personality traits may be easily assumed through this less demanding process (Wright 1975). Of the five items on Aaker's (1997) Brand Personality Scale (BPS), a consumer may not consider all five dimensions (compensatory information processing) when making a decision about the product, but may select only one or a few dimensions. For example, a newly launched product may be perceived as high in competence compared to the other brand personality dimensions. Non-compensatory information processing enables formation of perceptions of personality congruence even at the first moment of exposure to newly launched products and even in cases where less information is available.

Solicited or unsolicited exposure to more information about a product over time results in greater information processing of all attributes (Wright 1975). In this setting, more effort is required to achieve personality congruence.

Consumers tend to be more meticulously involved in purchase decision-making when they consider all five brand personality dimensions (sincerity, excitement, competence, sophistication, and ruggedness). This greater consideration lowers preference level. The addition of novel attributes to highly complex products leads to a lower evaluation due to the negative learning cost (Mukherjee and Hoyer 2001, Im 2012) required to become more acquainted with the new features. Thus, lower brand personality congruence leads to more elaborate processing (Sujaan 1985), which leads to lower preference. Thus, the following hypothesis is put forward:

H₂: Personality congruence will have a greater influence on preference when consumers use non-compensatory information processing rather than compensatory information processing.

2.3 Categorization and Inference

Previous studies have shown that when faced with a new product, consumers use categories, form inferences, and make decisions based on gained information (Murphy and Ross 1994, Gregnan-Paxton and John 1997). The ability to classify objects into pre-existing categories and make inferences is cognitively economical, as it saves consumers the effort of having to judge each object (Huber and McCann 1982).

For evaluation of products, initial category membership can be explained by the prototype theory of categorization (Rosch and Mervis 1975), which suggests that all categories have a prototype, or a set of average attributes that most members of the category possess. The degree of similarity of a new product to this prototype determines its initial categorization. The prototype theory suggests that people conceptualize a mental representation of the category based on personal experience and then use it as a reference point to determine category membership.

Another important predictor of initial categorization is typicality. Typicality is determined by the number of attributes that an object shares with other objects in a category. The greater the typicality of a new object in relation to an existing category, the more likely it is that the object will be categorized as a member of that category (Rosch and Mervis 1975, Loken and Ward 1990).

However, new high-technology products often have attributes that are not associated with pre-existing categories. These products may be related to formerly unknown or disparate categories, or the information available about them may be limited. The relationships among personality congruence, categorization, and inference-making therefore depend on the amount of information that is available about these products. Consumers are frequently exposed to new products through information provided to them via various media. Initially, a limited amount of

information may be available for newly launched products. This initial amount of information provides the basis for further inference. Judgments and decisions about categorization and inferences may change as more information is gained over time.

In the consumer inference literature (Kardes, Posavac and Cronley 2004), two basic inference processes about products are described: induction, or generalizing from specific information to general conclusions, and deduction, or interpreting specific conclusions from general principles or assumptions (Beike and Sherman 1994, Mass, Colombo, Sherman and Colombo 2001). Inductive inferences are formed when consumers use given specific information about a product's attributes. They may draw general conclusions about personality congruence and come up with an overall evaluation. Further, the information used as a basis for inference is classified as either stimulus-based or memory-based. Stimulus-based inductive inferences are formed when the product category is unfamiliar, and consumers have little prior knowledge or experience on which to base a decision. In contrast, memory-based inductive inferences occur when the product category is familiar because of integrated knowledge or experience gained over time (Kardes, Posavac, and Cronley 2004).

Because this study focuses on specific product attribute information, only inductive inferences are addressed here. However, we assume that the information used as the basis for

inference will be both stimulus- and memory-based depending on the amount of information provided. Information integration theory informs our analysis in this respect. Initially, when less and/or a limited amount of information is released for new products and no prior evaluation of the product is stored in memory, overall evaluation through a simple algebraic rule such as adding, averaging, or multiplying (Anderson 1981, 1982) can be useful for stimulus-based inference. On the other hand, when a new product is placed into a pre-existing category early in the evaluation process, newly learned product attributes will either strengthen or weaken the relationship between personality congruence and categorization inferences.

If minimal information is provided about a product, consumers may or may not perceive personality congruence. When new information is inconsistent with their former inferences, consumers may perceive differences between their own personalities and brand personality. A schema incongruity between the new product and its category may occur in the form of personality incongruity. Incongruity prompts arousal; cognitive elaboration occurs in order to resolve the incongruity (Meyers-Levey and Tybout 1989). Incongruity resolution occurs either through assimilation of new information into the initial category, or by sub-typing into a new category (Susan and Bettman 1989). While a moderate level of incongruity may be resolved through increased cognitive effort, ex-

treme incongruity cannot be resolved: the result is a negative evaluation of the product (Meyers-Levy and Tybout 1989).

When less information is available about a product, personality congruence affects preference more profoundly because inferences about personality congruence are easier to make. Categorization of a high-technology product is more difficult when less information is provided. In this circumstance, consumers use personality congruence as a processing procedure to evaluate the product. Thus, consumers with perceived high personality congruence will have higher preference for the product when offered more information about it compared to those with low personality congruence.

As the amount of information increases, personality incongruity may develop. As consumers learn about the true characteristics of the product over time, their understanding of the relationship between themselves and the product may change. Having to process more attributes due to an increased amount of information requires significant cognitive effort to determine if congruence is present. Schema incongruity is more likely to arise in these circumstances. As consumers are exposed to more information, personality congruence is less likely to be used for product evaluation. They tend to categorize the product using the given information. Personality congruence has less effect on preference once the product has been categorized. In addition, when consumers have

more information about the product, personality has less impact on preference regardless of perceived personality congruence.

H₃:

- a) When less information is available about a product, consumers who perceive high personality congruence with a product will tend to have a higher preference for that product compared to those who perceive low personality congruence with it.*
- b) When more information is available about a product, personality has less impact on preference regardless of perceived personality congruence.*

2.4 Need for Closure

Kruglanski and Freund (1983) introduced the concept of need for closure (NFC), which refers to an "individual's desire for a firm or definite answer to a question and an aversion toward confusion, uncertainty, or ambiguity" (Kruglanski 1990). NFC can vary across situations and individuals. Time pressure and environmental noise may activate a desire for closure. Many consumers have limited time to make purchase decisions in addition to the mental and physical costs of purchase decision-making. NFC tends to increase under time pressure (Kruglanski and Freund 1983, Kruglanski and Webster 1991). It may also increase when processing costs too much in terms of effort, or

it may be aroused when a product is unattractive to the consumer. In one study, participants under time pressure perceived greater similarity between themselves and other group members than those not under time pressure (Shah, Kruglanski and Thompson 1998).

Individual differences in NFC may also exist (Kruglanski 1989). Webster and Kruglanski (1994) developed the Need for Closure Scale to measure these individual differences. They demonstrated the following five aspects of this construct: preference for order, structure, and environments that are organized and ordered through consistent rules and practices (e.g., "I think that having clear rules and order at work is essential for success"); discomfort with ambiguity and uncertainty (e.g., "I'd rather know bad news than stay in a state of uncertainty"); a tendency toward decisiveness without deliberation or delay because of aversion to ambiguity (e.g., "I usually make important decisions quickly and confidently"); desire for predictability and preference for settings in which the events that are likely to unfold can be anticipated (e.g., "I do not like to go into a situation without knowing what I can expect from it"); and closed-mindedness without consideration of other sources of information (e.g., "I do not usually consult many different opinions before forming my own view").

In general, high-NFC consumers tend to search for more information prior to purchase (Vermeir and Kenhove 2005). They prefer or-

der and feel uncomfortable in situations of uncertainty. Different people prefer to use different types of information processing in making purchase judgments. In time-pressured situations, consumers search less prior to purchase. High-NFC consumers more often perform attribute-based searches rather than alternative-based searches because they prefer quick, unambiguous, and final answers that do not require much cognitive effort (Choi et al. 2008). They may have pre-existing knowledge and be less willing to spend time processing information. For example, if high-NFC consumers intend to buy one car among three alternatives, they may proceed by considering three attributes for each car one at a time. Low-NFC consumers may be more inclined to perform alternative-based searching, examining all three attributes of the car simultaneously, and then moving on to the next car. Houghton and Grewal (2000) indicated that high NFC results in low information seeking only if the consumer has a prior attitude regarding a brand or product category. In this study, we assume that prior attitudes about products are not possible, because the focus is on newly launched high-technology products.

High-NFC consumers display cognitive impatience and prefer to make judgments about products quickly. Therefore, consumers who perceive high personality congruence when evaluating a newly launched high-technology product tend not to use information regarding

the product for in their evaluations, tending instead to make quick judgments about the product based on personality congruence. On the other hand, consumers who perceive low personality congruence tend to require additional information prior to making judgments about the product. For them, more information about the product contributes to a positive evaluation.

In contrast, low-NFC consumers tend to form attitudes and evaluations about the product through information. Therefore, consumers who perceive high personality congruence will make an effort to search for more information. On the other hand, consumers who perceive low personality congruence will eventually stop searching for information due to lack of interest. For low-NFC consumers who perceive high personality congruence, release of more information will lead to a positive evaluation of the product. Lastly, in situations of low congruence, low-NFC consumers have no interest in the product and no desire to learn more about it; therefore their preference level is not affected by the amount of product information.

H₄:

- a) *When personality congruence is high, high-NFC consumers will exhibit no change in preference regardless of the amount of available product information.*
- b) *When personality congruence is low, high-NFC consumers will exhibit higher pref-*

erence when given more product information.

- c) *When personality congruence is high, low-NFC consumers will exhibit higher preference when given more product information.*
- d) *When personality congruence is low, low-NFC consumers will exhibit no change in preference regardless of the amount of available product information.*

III. Analyses

3.1 Methods

3.1.1 Product Selection

For the pretest, subjects (N = 26) were told that a "newly launched" product was being evaluated in this study. They would be given information about the product and then asked to complete a survey, making judgments concerning the amount of information provided about the product. Three different products were evaluated for inclusion in the experiments: the Ultrabook, Tablet PC, and Smartphone. Results for all three products indicated higher means for products for which less information was provided. Significant differences in means were observed between preferences for less or more information about product attributes ($p < .01$, Table 1).

Although all three products were suitable for

(Table 1) Results of the pretest for all three products

Information Preference		Mean	Standard Deviation	t-value
Ultrabook	Less info	5.35	1.55	2.849*
	More info	3.58	2.08	
Tablet PC	Less info	5.31	1.54	3.409*
	More info	3.42	1.68	
Smartphone	Less info	5.42	1.58	3.803*
	More info	3.23	1.63	

* $p < .01$.

use in our analysis, we expected that the newly launched product, the Ultrabook, would be more appropriate for our analysis than the other two due to its newness.

3.1.2 Participants

Subjects were told that a newly launched product, the Ultrabook, was the focus of this study, and that they would be given some information about the product and then asked to make judgments concerning the effects of having less and more information about it. Undergraduate students from K University ($N = 206$: 85 females, 118 males, 3 unknown; $M = 23.71$ years, $SD = 2.073$) completed the survey about amount of product information (total $N = 412$) in exchange for a \$1.00 lottery ticket attached to the first page of the survey.

3.1.3 Procedure and Materials

In this study, individual personality and product personality were measured through the

use of the BPS (Aaker 1997). In addition, participants were given a certain amount of information about the product and were to ask to make judgments concerning the personality congruence effects depending on the amount of information provided. Also, to measure the NFC construct, the NFC scale was used (Kruglanski and Webster 1994). Lastly, demographic information was collected for comparison purposes.

The 15 facets and 5 dimensions of the BPS (Aaker 1997) were used to measure individual personality and product personality using advertisements providing different amounts of information in order to facilitate investigation of personality congruence. Aaker's (1997) brand personality dimensions provide a framework to describe and measure the personality of a brand. The BPS identifies 42 features divided among 15 facets and 5 dimensions of brand personality: sincerity, excitement, competence, sophistication, and ruggedness. These facets and dimensions are listed in Table 2.

For self-related traits, participants rated to what degree they would like to see the 15

〈Table 2〉 Aaker's Brand Personality Scale (BPS) dimensions and indicators

Brand personality				
Sincerity	Excitement	Competence	Sophistication	Ruggedness
Down-to-earth	Daring	Reliable	Upper-class	Outdoorsy
Honest	Spirited	Intelligent	Charming	Tough
Wholesome	Imaginative	Successful		
Cheerful	Up-to-date			

traits listed in Table 2 in themselves on a 7-point scale (1 = would not like at all, 7 = would like very much). In addition, the same traits were rated for the Ultrabook. Participants indicated the response that would best describe the product if it were a person. Different information conditions about the product were provided. These traits were also rated on a 7-point scale (1 = would not like at all, 7 = would like very much). Personality congruence was defined as the distance between respondents' self-image scores and product personality scores, calculated using the distance squared model $\sum_{i=1}^n (P_{ij} - S_{ij})^2$ (Parker 2009), where P_{ij} = the brand image perception i of an individual j and S_{ij} = the self-image i of an individual j . The larger the d-score (distance) between the product and the self-image, the lower the congruence.

For manipulation of the amount of information, two versions of the product information brochure were created for the Ultrabook product. Both showed the same picture of an Ultrabook, but they differed in the amount of information they provided about the product. In total, five sets of surveys were randomly distributed to

the participants, who were grouped according to amount of information: group a (1 vs. 2), group b (2 vs. 4), group c (3 vs. 6), group d (4 vs. 8), and group e (5 vs. 10), where figures represent the number of traits providing information about the product.

To measure the NFC construct, the NFC scale developed by Kruglanski and Webster (1994) was used. This scale contains five subscales: preference for order and structure, preference for predictability, tendency toward decisiveness, discomfort with ambiguity, and closed mindedness (Webster and Kruglanski 1994, Vermeir and Kenhove 2005). All items of the NFC construct were measured on a 7-point Likert scale. Items were mixed to avoid response set errors. Respondents were then asked to rate on a 7-point scale (1 = would not like at all, 7 = would like very much) how much they thought they would prefer the product based on the amount of information they had. In addition, participants rated the same traits on a 7-point scale (1 = would not like at all, 7 = would like very much) by indicating the number that best described the product as if it were a person depending on the amount of in-

formation provided.

The internal consistency of the model was determined using Cronbach's α . After measurement of multiple items for the variables put into the distance squared model, the average between items was found and converted to a single value for the analysis. Then the items

were reconstructed for which the reliability of the variables for personality and NFC were high. As a result, the reliability coefficient for the total sample for each item was 0.6 or higher. Variables measured with these multiple items were analyzed using the average of the single variable (Tables 3 and 4).

<Table 3> Reliability of the Brand Personality Scale (BPS) used in this study

Variable	Factors	Items	Cronbach's α (prior to deletion of low-scoring items)	Cronbach's α (after deletion of low-scoring items)
Personality	Sincerity	Down-to-earth	.796	.820
		Honest		
		Genuine		deleted
		Cheerful		
	Excitement	Daring	.704	.784
		Spirited		
		Imaginative		deleted
		Up-to-date		
	Competence	Reliable	.825	.825
		Intelligent		
		Successful		
	Sophistication	Upper-class	.627	.627
		Charming		
	Ruggedness	Outdoorsy	.722	.722
		Tough		

<Table 4> Reliability of the Need for Closure (NFC) Scale used in this study

Variable	Items	Cronbach's α
NFC	I have a well-ordered lifestyle.	.831
	My personal space is organized.	
	I like to have a place for everything.	
	I do not like uncertain situations.	
	I do not like to go into a situation without knowing what to expect.	
	I do not like unpredictable situations.	
	When faced with a problem, I usually see the one best solution very quickly.	
	I usually make important decisions quickly and confidently.	
	I do not like it when a person's statement is unclear to me.	
	I like to know immediately what a person means.	

3.2 Analysis 1

3.2.1 Results

In order to prove H_1 , the distance score between self personality (as measured by self-image) and brand was used as the value for personality congruence (the independent variable). Preference for the brand was the dependent variable. Consequently, preference had a negative effect when the distance score for personality congruence was greater ($\beta = -.401$, $p < .000$). H_1 posited that higher personality congruence would have a positive effect on preference level (Table 5). Therefore, H_1 was supported.

Hypothesis 2 (H_2) predicted that personality congruence judgments are based on non-com-

pensatory rather than compensatory information processing. In other words, consumers consider certain aspects of product personality and not others when making preference decisions. The results of the analysis showed that participants considered individual personality factors before making decisions, not all five personality factors at once (Table 6). Therefore, personality congruence judgments were based on non-compensatory rather than compensatory information processing. Therefore, H_2 was supported. This result supports the statement of Parker (2009) that consumer perceptions of higher product personality congruence lead to higher preference for the brand. In the study of Parker (2009), brand personality judgments were based on compensatory information processing; however, H_2 in this study predicted that brand person-

<Table 5> Results of the regression analysis for H_1

	coefficient	t-value	p-value
Constant	4.686	39.424	.000
Congruence	-.401	-4.760	.000

Preference (dependent variable): $F = 22.656$; $p < .01$

<Table 6> Results of the regression analysis for H_2

	coefficient	t-value	p-value
Constant	4.691	38.732	.000
Sincerity	-.135	-1.817	.070
Excitement	-.157	-2.183	.030
Competence	-.100	-1.290	.198
Sophistication	-.030	-.416	.677
Ruggedness	.002	.032	.974

Preference (dependent variable): $F = 5.160$; $p < .01$.

ality judgments would be based more on non-compensatory rather than compensatory information processing. In the results of the analysis, consumer judgments about personality congruence were based on product evaluation of which factor was most important. Thus, when a company develops a brand's personality, focusing on key factors within the five dimensions is recommended rather than trying to cover all factors.

3.3 Analysis 2

3.3.1 Results

H_{3a} predicted that when given less information compared to more information, consumers who perceived high personality congruence would have a higher preference for the product compared to those who perceived low personality congruence. H_{3b} predicted that when more information is available about a product, personality would have less impact on preference regardless of perceived personality congruence. The independent variables were the level of

information and personality congruence. Respondents offered ratings based on different information levels. Responses regarding the independent variable, personality congruence, were averaged for a single variable (Cronbach's $\alpha = .899$) and divided into two groups using an average cut-off score of 1.219 (Wu and Yen 2007). Mean values in the high and low congruence groups were 0.74 and 1.85, respectively. The difference between the high and low congruence groups was found to be statistically significant ($t(410) = -24.718, p = 0.000$). Preference was entered as the dependent variable. The manipulation check for Analysis 2 was therefore confirmed.

When less information is available about a product, perceived high personality congruence (4.47) had a strong positive influence on preference level compared to low personality congruence (3.71) ($t = 4.078, p < .01$). On the other hand, when more information was released, perceived high congruence (4.33) and low congruence (4.09) had no influence on preference level ($t = 1.426, p > .1$). Therefore, H_{3a} and H_{3b} were supported (refer to Table 7).

<Table 7> Preference by congruence and amount of information

	high congruence	low congruence
high information	4.33 (1.10)	4.09 (1.27)
	$t = 1.426$	
low information	4.47 (1.17)	3.71 (1.38)
	$t = 4.078^{**}$	

* $p < .05$, ** $p < .01$.

3.4 Analysis 3

Depending on the NFC group, the influence on preference of perceived congruence and amount of information may differ. To examine this possibility, values for NFC (low/high) were multiplied by values for personality congruence (low/high) and amount of information (low/high) using three-way analysis of variance (ANOVA).

3.4.1 Results

Mean values in the high- and low-NFC groups

were 5.34 and 3.92, respectively. The difference between values between groups was found to be statistically significant ($t(204) = 19.369$, $p < 0.01$). Preference was entered as the dependent variable.

The results of ANOVA for the interaction among the variables such as amount of information, NFC, and congruence are provided in Table 8. The relationships between these constructs and preference are depicted in Table 9.

In the investigation of the interaction among the variables (NFC level, amount of information, and level of congruence) when different amounts of information were provided, the following re-

<Table 8> ANOVA for preference: amount of information $\times$ NFC $\times$ congruence

Source	SS	Df	MS	F	p
Amount of information	.166	1	.166	.120	.729
NFC	16.686	1	16.686	12.065	.001
Congruence	19.329	1	19.329	13.976	.000
Amount of information $\times$ NFC	15.057	1	15.057	10.887	.001
Amount of information $\times$ congruence	6.124	1	6.124	4.428	.036
NFC $\times$ congruence	6.457	1	6.457	4.668	.031
Amount of information $\times$ NFC $\times$ congruence	5.657	1	5.657	4.090	.044
Error	558.752	404	1.383		

<Table 9> Preference by congruence, NFC, and amount of information

Congruence	High NFC		Low NFC	
	High info.	Low info.	High info.	Low info.
High	4.70 _a (0.95)	4.76 _a (1.01)	3.87 _b (1.10)	4.24 _c (1.25)
	$t = -0.323$		$t = -1.690^*$	
Low	4.49 _a (1.16)	3.55 _b (1.32)	3.69 _b (1.26)	4.04 _c (1.48)
	$t = 3.676^{***}$		$t = -1.048$	

Note: Cells in the same row with unlike subscripts differ significantly at $p < .1$.

* $p < .10$, ** $p < .05$, *** $p < .01$.

sults were observed. The three-way interaction effect was statistically significant ($F = 4.090$, $p < .05$). In the high-NFC group, perceived high congruence had no influence on preference (high info: $M = 4.7$; low info: $M = 4.76$; $t = -0.323$, $p > .10$). Therefore, H_{1a} was supported. However, a comparison of high and low information levels with regard to low congruence demonstrated that consumers preferred to have more information (high info: $M = 4.49$; low info: $M = 3.55$; $t = 3.676$, $p < .01$). Therefore, H_{1b} was supported. In the low-NFC group, high congruence indicated that consumers preferred to have less information (high info: $M = 3.87$; low info: $M = 4.24$; $t = -1.69$, $p < .10$). Therefore, H_{1c} was not supported. No difference was observed between high and low information levels under the low congruence condition (high info: $M = 3.69$; low info: $M = 4.04$; $t = -1.048$, $p > .10$). Therefore, H_{1d} was supported.

Members of the high-NFC group who perceived high personality congruence assumed they knew enough about the product. Since they felt more familiar with the product, their preference remained unchanged regardless of the information level. On the other hand, members of the high-NFC group who perceived low personality congruence expressed the desire to know more about the product. For these consumers, having more information influenced preference positively compared to having less information. Results of past studies

indicated that low-NFC consumers prefer to search for information more often prior to purchase than high-NFC consumers do (Vermeri and Kenhove 2005). The results of this study accord with those of past studies.

IV. Conclusions

This study investigated the influence of brand personality congruence on preference for high-technology products. The results indicated that judgments regarding brand personality congruence were based on non-compensatory rather than compensatory information processing. Consumers considered certain aspects of product personality rather than the product as a whole when making preference decisions. They formed inferences based on associations between product attributes and product type or category. High brand personality congruence was perceived early in the initial stages of exposure to lower amounts of product information because consumers assume similarity when less information is provided compared to when more information is provided. Under these conditions, consumers showed higher preference for the product.

However, as more product attribute information became available, categorization of the product tend to be easier. Therefore, personality congruence had little effect on preference. Lastly,

the preferences of high-NFC consumers who perceived high congruence were not affected by the level of information. Due to an aversion to uncertainty and a strong desire for quick and easy decision-making, the opposite results were seen for low-NFC consumers. When high-NFC consumers perceived high personality congruence, they were fully aware of the characteristics of the product and associated strongly with the product's personality. On the other hand, in the group of consumers with high NFC who perceived low personality congruence, having more information affected preference positively. Consumers with high NFC who perceived low congruence with the new high-tech product tended to prefer more information about it compared to less information because they required it for evaluation of the product. Therefore, a high level of information had more effect on preference. For low-NFC consumers, despite the lack of information, perceived high congruence led to a higher preference for the product. These consumers were willing to evaluate using personality congruence prior to receiving more information about the product due to their conservative tendencies. If they received more information, they perceived dissimilarities, and so personality incongruence had less effect on preference. For low-NFC consumers who perceived low congruence, the level of information had no influence on preference because they had no interest in or desire to learn more about the product.

4.1 Implications

The rapidly-changing nature of the high-technology market has resulted in a lack of research on consumer response to the emergence of new technologies. As the high-technology industry continues to grow, suppliers must establish and practice various strategies to attract and secure consumers. Producing high-technology products is a complex process, and predicting the acceptance of these products can be difficult. The degree of desired knowledge on the part of target consumers and the level of perceived personality congruence are important elements of market strategy. Increasing the congruence between self-image and product personality can be accomplished through control of the level of information and utilization of consumers' need for closure (NFC). For high-NFC consumers who perceive low personality congruence, the release of more information may trigger the desire to know more about the product. In contrast, the interest of low-NFC consumers who perceive high personality congruence between themselves and a product can be stimulated through the release of less information.

4.2 Limitations and Directions for Future Research

This study investigated the relationships among personality congruence, consumer preference,

amount of information, and consumers' need for closure. One limitation encountered in this study was the insufficient quantity and variation of survey sets provided to the test subjects. In this study, five sets of surveys were distributed. Additional research is needed to determine if the introduction of various different sets has a significant effect on the results. Additional research is also required to determine the relationship between categorization levels and personality congruence. Norman (1988) stated that "as technology has advanced, we have understood less and less about [its] inner workings". Despite this lack of understanding, the demand for "mysterious" products is high (Norman 1988). Although it may seem like a contradiction, minimal information fosters immediate identification with the product, which leads to the desire for more information (Scammon 1977). Information load is the amount of information a person must process per unit of time. Information load can be increased by increasing the number of attributes to be considered per category. Although consumers must deal with information load, decisions become more difficult as the time resources available for processing the available information decrease (Bettman, Luce and Payne 1998). These issues require further investigation. Past research results suggest a possible maximum number of attributes that can be processed by an individual before her cognitive capacity is reached and unpredictable behavior occurs. In some

studies, consumer information processing levels decreased when the number of attributes exceeded ten (Streufert 1970, Streufert, Driver and Huan 1967). In order to confirm the effects of information processing bias or information overload, further research is needed.

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