

Testing a Four-dimensional Personality Construct in the Context of Marketing Communications

陶聖屏

新聞研究所

中校助理教授

孫濤

美國波士頓愛默生學院傳播系

助理教授

Abstract

Based on a large-scale representative data of 3160 respondents, the purpose of this research is to test Doyle's four-dimensional, two-level personality structure in the context of marketing communications. On the first level, people are divided along two dimensions, extroverted vs. introverted, and tough-minded (masculine) vs. tender-minded (feminine); on the second level, personalities are composed of "drivers", "amiables", "expressives", and "analytics" types. Applying cluster analysis and analysis of variance (ANOVA), this study provides additional psychometric validation to Doyle's hypothesis. Further, construct validity is examined through a case study, which is to test the application of this categorization by investigating various attitudes toward TV commercials among people of different personalities. Theoretical and practical implications are discussed and future studies are suggested.

Keywords : marketing communications, personality structure, cluster analysis, consumer behavior, lifestyle

Testing a Four-dimensional Personality Construct in the Context of Marketing Communications

Introduction

The research on personality or temperaments has gone through its ebb and flow. It started in the Greek times, went silent in the Renaissance time, and was resurrected in contemporary age. Though researchers might risk losing some (if not important) information when they try to categorize people into several personality dimensions, this categorization has been proven to be necessary and useful (Doyle, 1988). The application of this research has been discussed in such settings as sales (Merril & Reid, 1981; Alessandra & O'Connor, 1990), advertising (Ratchford, 1987), psychological counseling (Doyle, 1992), and consumer behavior (e.g., Sparks & Tucker, 1971). Among the many personality dimensions proposed by various researchers, Doyle's one has been found appealing and clear-cut. His four-dimensional structure summarizes previous literature, and provides a solid two-level explanation to personalities. On the first level, people are divided along two dimensions, extroverted vs. introverted, and tough-minded (masculine) vs. tender-minded (feminine); on the second level, personalities are composed of "drivers", "amiables", "expressives", and "analytics" types. Doyle has provided some neurophysiological, psychometric and psychoanalytic support to his hypothetical construct (Youn & Doyle, 1999; Doyle, 1998). However, further psychometric validation is still needed, especially on a large-scale representative data. This paper aims to provide additional psychometric support to Doyle's four-dimensional, two-level personality structure. As there have been endless debates over what constitute personality items and how exhaustive they should be, this study will not test Doyle's personality construct through such data-reduction technique as factor analysis. Assuming the conceptual validity of Doyle's construct, this paper will instead test the discriminant validity of the four personality categories through the cluster analysis. In the end, this research will further explore the application of this categorization in a case study – to look at various attitudes toward TV commercials among people of different personalities.

Historical Review

Scholarly interests on temperaments could date back to around 175 AD, when the Greek psychiatrist Galen postulated four primary temperaments: sanguine, melancholic, phlegmatic, and choleric -- a theory that would last until the 19th century (Doyle, 1998). Today, out of Galen's original constructs evolve different temperament theories (see Olson and Morgan, 1982; Henke, 1990; Mills and Faure, 1991), which have been supported through interdisciplinary methods (for a review of neurophysiological, psychometric, and psychoanalytics support, see Doyle, 1998). Along the psychometric research tradition, researchers relied on factor analysis and other data reduction techniques to develop various temperament constructs (Eysenck, 1944, 1991; Cattell, 1957; Doyle, 1998). However, scholars have been divided over the basic psychometric dimensions of personality (Doyle, 1998). Eysenck (1953) produced four categories on two orthogonal axes -- introversion/extroversion and excitement/restraint. He then proposed three basic dimensions -- extroversion, neuroticism, psychoticism (1953/1970, 1991, 1994). Kagan (1943) observed that there are five major temperament types -- introversion, extroversion, emotionality, psychic involvement in work, and responsibility/impulsivity. There is another set of five dimensions -- surgency, agreeableness, conscientiousness, emotional stability, and intellect (Costa & McCrae, 1988, 1992; Goldberg, 1990). Tellegan (1985) extracted three major personality factors -- positive, negative and emotionality. For Zuckerman (1994), another three sets of dimensional factors explain personalities -- introversion/extroversion, aggression/agreeableness, impulsive sensation-seeking/sensation-avoidance. Kagen (1994) suggested a neurophysiological and genetic foundation for what he called the inhibited and uninhibited temperaments. Jung derived four personality "operations" from the Greek temperaments: intuition, feeling, thinking and sensing (1923, 1923/1971). Merrill and Reid (1981) proposed a similar typology -- analytics, amiables, drivers and expressives. Doyle (1998) identified a pattern of cultural propensities--acquisitiveness, affiliation, concentration, and expansiveness--which centered both in Jung's operations and Merrill and Reid's typology (see Figure I).

Doyle's Four-Personality Construct

Doyle based his personality typology on two levels. On the first level, he put two sets of dimensions at the coordinates -- tough-minded vs. tender-minded (adopted from James, 1890), and introverted vs. extroverted (after Jung, 1923/1971). The former can be also known as masculine vs. feminine, and the latter can be also called inhibited vs. uninhibited (Doyle, 1998). The second-level dimensions, drivers vs. amiables, and analytics vs. expressives, are diagonal quadrants of the original four-fold table. They are the new coordinates that bisect the original coordinates (see Figure II).

Doyle described (hypothetically) various characteristics of the four-personality types. Tough-minded extroverts, as he put in the first quadrant (also known as sensing type, drivers, or acquisitive, see Figure II), are optimistic, practical, independent, decisive, and dominating; tender-minded introverted (the third quadrant in Figure II, also known as feeling type, amiables, or affiliative), in contrast to tough-minded extroverts, are shy, slow to relax. They are supportive but also egotistical. Tender-minded extroverts (the second quadrant in Figure II, also known as intuiting, expressives or divergent), are optimistic and relaxed. They are ambitious, impulsive, and undisciplined; tough-minded introverts (the fourth quadrant in Figure II, also known as thinking type, analytics or concentrated), in contrast to tender-minded extroverts, are tense, shy, thorough, materialistic, but also indecisive, rigid and picky (Doyle, 1998). To the two levels of four-type operations, Doyle (1992) attached characteristic fears respectively -- incompetence, abandonment, disarray and constraint (see Figure I). In the context of money and property (which might as well apply to other contexts), as Doyle argued, the central psychological purpose of money and property is to defend against threats to the ego (Doyle 1998). The real foundation for acquisitive people (drivers) may be the fear of losing competence, against which accumulating property is a talisman. They accumulate material things like badges of honor. For concentration people (analytics), it is the fear of disarray, against which an ordered life is a talisman. They are financially cautious and controlled, if not stingy. The real foundation for affiliative people (amiables) may be the fear of isolation, against which a tightly knit community is a talisman. They avoid accumulating money. For divergent people (expressives), it is the fear of

constraint, against which free, even extravagant, personal expression is a talisman. They tend to use money and property in impulsive ways (Doyle, 1998). An important structural feature of Doyle's quaternary is that diagonal elements stand in dialectic (contradictory) opposition to one another, that is, acquisitiveness (drivers) vs. affiliation (amiables) and expansiveness (expressives) vs. concentration (analytics). Adjacent, non-diagonal elements are contrary but not contradictory --they might share some important characteristics, such as drivers and expressives, or drivers and analytics (see Figure II).

Personality and Consumer Behavior

Over the years, researchers have been trying to test the link between personality and consumer behavior. Based on a neo-Freudian approach, Cohen (1968) examined three personality types that cope with anxiety -- compliant, aggressive and detached. He found some correlation between these types and certain choice of brand names and products. Sparks and Tucker (1971) found sociability, emotional stability and irresponsibility to be determinant predictors of cigarette smoking, alcohol drinking, shampoo use and early fashion adoption. Goldsmith (1983) examined the role of venturesomeness in new product purchase. In studies similar to present investigation, some researchers found that more impulsive and extroverted people are more often smokers and drinkers, and engage in a range of more or less anti-social behavior (Eysenck & Eysenck, 1969; Allsop, 1986). In terms of introversion and extroversion, Chang (2001) reported that extroverted people generally evaluated products and advertisings more positively than introverted ones, and specifically this tendency more likely happened on those who rated their ideal selves high on extroversion. Foxall and Goldsmith (1988) investigated the characteristics of female supermarket shoppers as adapters who were reliable and prudent, or as innovators who were assertive and sensation-seeking.

This research first tested the discriminant validity of Doyle's two-level personality types. Then it would look at how people of different personalities might differ in their attitudes toward advertising. Doyle and Swenson (1995) did a preliminary validity test of these two-level dimensions through correlation analyses of various attitude/interest/opinion questions in the Needham Life Style data (DDB Needham, 1995). This study is another validity test toward this direction -- this time

to put people into personality categories by way of cluster analysis using an updated DDB 2002 survey data.

Sample

Our analysis was based on the 2002 Life Style data. Collected annually since 1974, the DDB Needham Life Style Survey consists of 900-item self-report instrument that cover such diverse Life Style questions as attitudes/interests/opinions, daily activities, product usage, media usage, and demographics. The survey was drawn from standing-panel quota samples that closely match those of the United States adult population (Piiro, 1991, p. 111). The survey questionnaires were sent by mail to 2,000 females and 2,000 males in the spring of 2002 with response rate of 79%. In addition to its business uses, it has been employed in dozens of academic studies such as Shrum and colleagues' (1995) constructing a psychographic profile of green consumers, Shah and colleagues' (2001) mass media use and civic engagement.

In the survey data, two sets of items are focused. The first is the 60-item self-report personality items, the second is the 206 items of attitude/interest/opinion (AIO) questions. The self-description personality questions ask respondents how they would like to be seen by other people (see Figure III). The AIO questions are rated on a seven-point scale, with "1" indicating "definitely disagree", "2" indicating "generally disagree", "3" indicating "moderately disagree", "4" indicating moderately agree, "5" indicating "generally agree", "6" indicating "definitely agree," "7" meaning "not specified."

Method and Analysis

First, certain personality items were selected to cluster respondents into four temperament categories, as defined by Doyle. The cluster distance was examined to check the discriminant validity of the four clusters. We further tested the validity of this categorization by comparing the four categories on several AIO-related items that by our judgment match Doyle's distinct cluster characteristics. If these different items correspond to Doyle's description of different personality types, we would then be confident enough to look at how people of different personalities view TV commercials.

Cluster Analysis -- Formulating First-Level and Second-level Dimensions

Under the guidance of Doyle's four personality constructs, four clusters were forced on the life-style cases by way of the 4 personality items – “masculine,” “feminine,” “outgoing,” and “traditional.” It is, at least, believed that these four items’ face validity could measure Doyle’s two orthogonal dimensions: tough-minded vs. tender-minded (masculine vs. feminine), and extroverted vs. introverted (outgoing vs. traditional). By cluster analysis, the aim is to group people based on how they score on these four items. We posit that people who score high both on “masculine” and “outgoing” are “drivers,” those who are high both on “masculine” and “traditional” are “analytics,” those who score high both on “feminine” and “outgoing” are “expressives,” and those who are high both on “feminine” and “traditional” are “amiables” (Figure II). Cluster results turned out to be what we had postulated. As shown in Table 1, the members of Cluster 1 tend to have a larger proportion of their population who said they are both “feminine” and “outgoing,” hence this cluster is termed as “expressives.” Accordingly, the other three clusters are named as “amiables,” “drivers,” and “analytics,” in the order of cluster membership. Another way to examine the orthogonal nature of Doyle’s personality constructs is by examining the distances between the final cluster centers (Table 2). It shows that Cluster 1 (expressives) and Cluster 4 (analytics) are furthest apart, and Cluster 2 (amiables) and Cluster 3 (drivers) are furthest apart. These two sets of clusters are what Doyle called diagonal elements in his personality quaternary (Figure II). They are supposed to stand in dialectic (contradictory) opposition to one another, hence the furthest distances. Cluster 1 (expressives) and Cluster 2 (amiables), which constitute “tender-minded,” are close together; and Cluster 3 (drivers) and Cluster 4 (analytics), which are “tough-minded,” are the closest (Table 2). Compared to the tender-minded and tough-minded sets, the distance between “drivers” and “expressives”(extroverted), and the distance between “analytics” and “amiables” (introverted), are further apart (Table 2). It seems to suggest that the dimension of introverted vs. extroverted is less obvious in this data than that of tender-minded vs. tough-minded (to visualize this scenario, refer to Figure II). In Doyle’s quaternary (Figure II), these sets of clusters are adjacent, non-diagonal elements. They are contrary but not contradictory, and they might share some important characteristics (as will be discussed in the next session). Hence they are close in distance. Both the results of cluster centers and those of cluster distances have added support to Doyle’s

first- and second-level personality constructs (Figure II).

ANOVA analysis -- Testing First-level and Second-level Dimensions

In the above cluster analysis, it is arrived at four clusters on the assumption that those four personality items measure the four quadrants in Doyle's personality construct (Figure II). Now some other AIO-related Life Styles items were selected by our judgment to fit Doyle's description of the four personality categories. If these categories correspond well to those items respectively, our categorization will be further established. In a previous Life Styles study of the same purpose, Swanson & Doyle (1995) selected four key items that they believe could capture the meaning of Doyle's personality quadrants. They used "I like to be considered a leader" to describe "extroverted," "I am a homebody" for "introverted," "Police should use whatever force is necessary to maintain law and order" for "tough-minded," "Too much fuss is made about animal rights" (reverse-score) for tender-minded. Those four items were also used in here, given a replication. ANOVA results largely substantiated this pattern (see Table 3a and Table 3b). From the tables, there are significant mean differences between "extroverted" and "introverted," "tender-minded" and "tough-minded." The dichotomy between extroverted vs. introverted is not clear-cut in the item "I like to be considered a leader." "Analytics" are even more likely than "expressives" to agree with this statement, though the difference is not statistically significant. As a result, another item was selected by our judgment, which could also, if not better, measure this dichotomy. For the item "I enjoy parties, games, shows – anything for fun," findings suggest that "extroverted" people agree with this statement more than "introverted" people.

To further test the discriminant validity of the second-level dimension of categorization, some other items were also selected by our observation to reflect distinct characteristics of Doyle's personality temperaments. Results indicated that those items manifest different if not unique characteristics of the four personality types, an outcome that could find its explanation in Doyle's theory on underlying fear (Figure II). For fear of abandonment, "amiables" people tend to attend church, participate in volunteer work. For fear of constraint, "expressives" people tend to engage in impulsive buying. They are also early adopters of new products. For fear of disarray, "analytics" people tend to delay decisions and prefer safety above all else – they are the least impulsive buyers, and they believe they are good at saving money. For fear of incompetence, "drivers" people proclaim that they hate to lose

even in a friendly competition, and they believe that they would do better than average in a fist fight (Tables 4a – 4d). In all, through cluster analysis, respondents have been successively assigned into four personality categories with distinct characteristics. Cluster analysis and ANOVA results have demonstrated that this categorization is valid and reasonable on two levels of dimensions.

Reflections on Consumer's Attitude toward TV Ads.

After a general presentation of our validity findings, the next step is to apply this categorization to a real-world setting – looking at how people of different personalities might differ in their attitudes toward TV commercials. As is seen in Table 5a, tender-minded people (expressives and amiables) are more likely to believe that ads help make better buying decisions, and they tend to refuse to buy a brand whose ad they dislike. They are also less likely to believe that TV ads insult their intelligence. These findings suggest that tender-minded people accept TV ads more willingly than their tough-minded (drivers and analytics) counterparts. Yet at the same time, tender-minded people hold strong feelings against certain content of TV ads. For example, they tend to dislike ads for alcohol, and ads putting emphasis on sex. They are also more likely to boycott products advertised on violent TV programs. As tender-minded people are relatively more favorable toward TV ads (though they are against certain commercial contents), advertisers should keep this in mind when they work on their media planning strategies. Now the gear is shifted to any attitudinal differences between extroverted types and introverted types (Table 5b). There are generally no significant differences among these items, except that on an average, introverted people tend to dislike ads for alcohol, and ads that emphasize on sex.

Above findings have clearly demonstrated that it is reasonable and valuable to group people into two diagonal dimensions of personality, as proposed by Doyle. In spite of limitations of these results (as we will discuss in the next session), findings can be considered as another step toward psychometric validation of Doyle's personality construct. This validation effort is worthwhile, because, as argued before, personality research has serious implications in many areas, such as education, counseling, and consumer behavior. For instance, in the area of consumer behavior, temperaments of consumers can help predict, if not predict, their buying behaviors (see the literature review section). Doyle's categorization paves the road for more in-depth descriptive study of distinct characteristics of different personality types, as

this case study did on people's attitudes toward TV commercials. This segmentation effort could help marketers understand their target audiences and then accordingly help marketers to map out specific strategies. This quaternary of personalities seems especially helpful for the sales people, who engage in interpersonal communications, where personalities might play a role. Since the non-interpersonal advertisers (electronic, in particular) are typically unable to target one particular audience at one time, it seems more difficult to apply the personality constructs in this setting. However, the emerging interactive advertising (particularly Internet advertising) is an excellent venue to test the effectiveness of Doyle's personality quaternary and our scale of personality categorization. Unlike other forms of electronic advertising (TV or radio), Internet advertising can size up one particular group of web browsers. Thus the quaternary of personalities can come into play in this interactive advertising process. Different Internet commercials can be designed to target at browsers of different personalities. Thus it would be better if we could have a way to personify Internet commercials (in types of "drivers", "amiables," "analytics," and "expressives," for example). Then these personified commercials might turn out to be more effective than "impersonal" commercials. Effective or not effective, this still needs further academic exploration. Commercials have features and characteristics, just like people have personalities. Previous research has shown that the greater congruity between the human characteristics that consistently and distinctively describe an individual's actual or ideal self and those that describe a brand, the greater the preference for the brand (e.g., Malhotra, 1988; Sirgy, 1982) and the products (Chang, 2001). Similarly, if marketers characterize and personify commercials, it would be easier for consumers of different personalities to identify with those products (or commercials) they like.

Limitation and Discussion

Though above findings have largely matched Doyle's proposition on and description of personality, certain limitations might make it premature to conclude that our results have completely validated this personality construct. First, the data in question cannot be taken for granted. The 60-item self-report personality questions in the Life Style data were not originally meant to measure the four personality types. To avoid any distraction and confusion, only four personality

items were selected that typify the four personality quadrants by our best judgment. This purposeful selection might have lost some other (if not important) personality attributes by limiting to four personality variables in cluster analysis. Future studies might design a questionnaire that will specifically measure the personality types. Experiment studies might also be warranted in future validation of the personality constructs.

Second, it should be aware that there is enormous variability under the simple quaternary schema. Most individuals and/or groups exhibit attitudes, values, and behaviors that might be associated with more than one quadrant. Besides, an individual's position on the personality coordinate might change over time and environment -- people's values and behaviors might change in response to situational factors like role, context, and relationship, and how free they feel "to be themselves" (Doyle, 1998). Thus, in interpretation of our results, readers should refrain from over-generalization.

In spite of the above limitations, findings have been very encouraging, given that they significantly match Doyle's original proposition on and description of personality dimensions. Doyle's personality construct is not monolithic -- it is still a developing theory. Inside this huge theoretical structure, some parts of inner structure still await re-furnishing and sometimes even rebuilding (e.g. characteristics of each personality type). Future studies are encouraged to further validate our personality groupings and explore fully the characteristics of the four personality types.

Conclusion

While we should be careful about any over-generalizations about our findings, we should also be confident about our significant results. Although most individuals manifest different attitudes and behaviors at various times and under different circumstances, there is generally enough consistent information of attitude and behavior that researchers can use to recognize people and predict, albeit, roughly, their future behaviors. In the case of Doyle's personality construct, virtually all individuals and groups can (and should) be described in terms of "scores" on the four attributes; better, on the two pairs of opposing attributes (Doyle, 1998). His hypothesis is supported in this study. By locating certain trademark characteristics

for each personality type, this research has strengthened the definition of Doyle's two-level personality dimensions. Based on a representative national data, this paper has further validated the two-level construct. That is, we have validated discriminantly the dichotomy between introverted (amiables and analytics) vs. extroverted (expressives and drivers), tender-minded (amiables and expressives) vs. tough-minded (analytics and drivers) on the first level, and the four individual personality categories on the second level. This adds more confidence to those who want to generalize and apply Doyle's construct to various settings of their interests. In the meanwhile, readers should realize that there are some (if not serious) limitations to the execution and interpretation of those findings, which pose further questions for future researchers to explore. However, as demonstrated in this case (or test) study of personality-based views on TV commercials, Doyle's categorization holds serious implications for both academics and practitioners in their own field of interests.

Figure I: The basic Quaternary of Temperaments (Doyle, 1998)

I (Jealousy, Guilt) Acquisitiveness Galen's Choleric Fear of Incompetence Wrestling (Taking) Sensing Drivers	II (Jealously, Guilt) Expansiveness (divergent) Galen's Sanguine Fear of Constraint Dissipating (Spending) Intuiting Expressives
IV (Envy, Shame) Concentration Galen's Phlegmatic Fear of Disarray Hoarding (Saving) Thinking Analytics	III (Envy, Shame) Affiliativeness Galen's Melancholic Fear of Abandonment Divesting (Giving) Feeling Amiables

Figure II. The four-fold personality structure (Youn & Doyle, 1999)

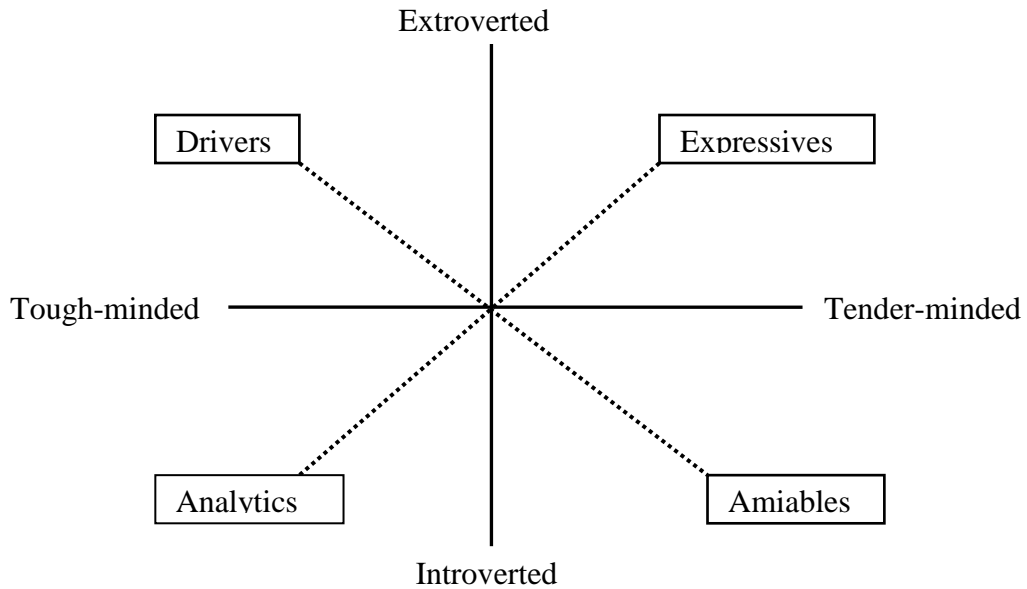


Figure III.

Original questions on personality items in the Life Style Survey (2002):

For each word, please circle the number that best describes how much you would like to be seen by other people. A "1" would indicate those words you would least like to be seen as by other people, and a "6" would indicate those words you would most like to be seen as. Of course, you can use any number in between.

Adventurous, Affectionate, Aggressive, Ambitious, Capable, Careful, Caring, Cheerful, Confident, Courageous, Creative, Demanding, Down-to-Earth, Easy-going, Ethical, Exciting, Family-oriented, Feminine, Fun-loving, Genuine, Glamorous, Good-looking, Happy, Hard-working, Humorous, Independent, Influential, Intelligent, Leader, Logical, Masculine, Optimistic, Organized, Outdoorsy, Outgoing, Outspoken, Patriotic, Physically-fit, Popular, Powerful, Practical, Respectful, Responsible, Romantic, Self-disciplined, Sensitive, Serious, Sexy, Skeptical, Sophisticated, Spiritual, Stylish, Successful, Thrifty, Tolerant, Traditional, Trendsetter, Trustworthy, Up-to-date, Youthful.

Table 1: Four Cluster Centers*

	Cluster 1 (Expressives)	Cluster 2 (Amiables)	Cluster 3 (Drivers)	Cluster 4 (Analytics)
Masculine**	-.67	-.78	.78	1.53
Traditional	-.696	.525	-1.24	.59
Feminine	.84	.65	-.88	-.97
Outgoing	.897	-.57	.20	-.096

* This output reports the standard deviations below or above the mean for all respondents. As the variables are rated on a 6-point scale, with 1 meaning “least like to be seen as,” 6 meaning “most like to be seen as,” the cluster with the highest standard deviation scores above the mean would feature the variable the most, and the cluster with the highest standard deviation below the mean would feature the variable the least. For example, you can read that the average “masculine” score for Cluster 4 is 1.53 standard deviation above the overall mean. So Cluster 4 tends to be the largest group of people who report themselves as “masculine.”

** The variables have been standardized before cluster analysis.

Table 2: Distances between Four Cluster Centers

	Cluster 1 (Expressives) N=749	Cluster 2 (Amiables) N=1025	Cluster 3 (Drivers) N=635	Cluster 4 (Analytics) N=751
Cluster 1 (Expressives)		1.920	2.431	2.992
Cluster 2 (Amiables)	1.920		2.922	2.496
Cluster 3 (Drivers)	2.431	2.922		1.884
Cluster 4 (Analytics)	2.922	2.496	1.884	

Table 3a: Tough-minded vs. Tender-minded

Life Style Items	Expressives vs. Amiables	Drivers vs. Analytics	Tough-minded vs. tender-minded
Police should use whatever force is necessary to maintain law and order ^a	3.43 ^b vs. 3.46 (.77)*	3.73 vs. 3.87 (.11)	.00 ^c
Too much fuss is made about animal rights ^a	3.23 vs. 3.31 (.35)	3.59 vs. 3.63 (.63)	.00*

a. The question is coded as follows: 1. Definitely disagree. 2. Generally disagree. 3. Moderately disagree. 4. Moderately agree. 5. Definitely agree. 6. Definitely

- agree.
 b. Mean.
 c. Significance level (two-tailed).
 * Significant at the 0.01 level.

Table 3b: Extroverted vs. Introverted

	Expressives vs. Drivers	Amiables vs. Analytics	Extroverted vs. Introverted
I like to be considered a leader ^a	4.19 ^b vs. 4.28 (.29) ^c	3.57 vs. 4.23 (.00)*	.00*
I am a homebody ^a	3.81 vs. 3.85 (.59)	4.34 vs. 4.12 (.00)*	.00*
I enjoy parties, games, shows -- anything for fun ^a	4.45 vs. 4.18 (.00)*	3.93 vs. 3.85 (.15)	.00*

- a. The question is coded as follows: 1. Definitely disagree. 2. Generally disagree. 3. Moderately disagree. 4. Moderately agree. 5. Definitely agree. 6. Definitely agree.

- b. Mean.
 c. Significance level (two-tailed).
 * Significant at the 0.01 level.

Table 4a: “Amiables” (Post-Hoc T-tests)

			Sig.
Attended church ¹	Amiables (4.22) ²	Expressives (3.99)	.04**
		Drivers (3.46)	.00*
		Analytics (3.58)	.00*
Did volunteer work ¹	Amiables (2.42)	Expressives (2.38)	.67
		Drivers (2.20)	.02**
		Analytics (2.12)	.00*

1. Coded as follows: 1. None in past year; 2. 1-4 times; 3. 5-8 times; 4. 9-11 times; 5. 12-24 times; 6. 25-51 times; 7. 52+ times.

2. Means.
 * The mean difference is significant at the .01 level (Post-Hoc LSD tests).
 ** The mean difference is significant at the .05 level (Post-Hoc LSD tests).

Table 4b: “Expressives” (Post-Hoc T-tests)

			Sig.
I am an impulsive buyer ¹	Expressives (3.17) ²	Amiables (2.84)	.00*
		Drivers (3.04)	.15
		Analytics (2.83)	.00*
I am the first to try new products ¹	Expressives (3.35)	Amiables (2.95)	.00*
		Drivers (2.82)	.00*
		Analytics (2.79)	.00*

1. Coded as follows: 1. Definitely disagree; 2. Generally disagree; 3. Moderately disagree; 4. Moderately agree; 5. Generally agree; 6. Definitely agree.

2. Mean.

* The mean difference is significant at the .01 level (Post-Hoc LSD tests).

Table 4c: “Analytics” (reverse-scored) (Post-Hoc T-tests)

			Sig.
I am an impulsive buyer ¹	Analytics (2.83) ²	Amiables (2.84)	.94
		Drivers (3.04)	.02**
		Expressives (3.17)	.00*
I am not very good at saving money ¹	Analytics (3.02)	Amiables (3.18)	.02**
		Drivers (3.40)	.00*
		Expressives (3.32)	.00*

1. Coded as follows: 1. Definitely disagree; 2. Generally disagree; 3. Moderately disagree; 4. Moderately agree; 5. Generally agree; 6. Definitely agree.

2. Mean.

* The mean difference is significant at the .01 level (Post-Hoc LSD tests).

** The mean difference is significant at the .05 level (Post-Hoc LSD tests).

Table 4d: "Drivers" (Post-Hoc T-tests)

			Sig.
Hate to lose even in friendly competition ¹	Drivers (3.71) ²	Amiables (3.01)	.00*
		Analytics (3.61)	.25
		Expressives (3.09)	.00*
I would do better than average in a fist fight ¹	Drivers (3.70)	Amiables (2.32)	.00*
		Analytics (3.51)	.03**
		Expressives (2.93)	.00*

1. Coded as follows: 1. Definitely disagree; 2. Generally disagree; 3. Moderately disagree; 4. Moderately agree; 5. Generally agree; 6. Definitely agree.

2. Mean.

* The mean difference is significant at the .01 level (Post-Hoc LSD tests).

** The mean difference is significant at the .05 level (Post-Hoc LSD tests).

Table 5a: Attitude toward advertising and TV commercials (tough-minded Vs. tender-minded)

	Expressives vs. Amiables	Drivers vs. Analytics	Tough-minded vs. tender-minded
Advertising insults my intelligence. ^a	3.40 vs. 3.41 (.88)	3.59 vs. 3.68 (.28)	.00
I refuse to buy a brand whose advertising I dislike. ^a	3.60 vs. 3.70 (.19)	3.54 vs. 3.52 (.85)	.03**
I avoid buying products advertised on violent TV programs. ^a	3.89 vs. 3.93 (.62)	3.65 vs. 3.56 (.24)	.00*
TV commercials place too much emphasis on sex. ^a	4.67 vs. 4.77 (.14)	4.25 vs. 4.32 (.34)	.00*
Ads for beer and wine should be taken off TV. ^a	3.39 vs. 3.77 (.00)*	3.11 vs. 3.03 (.39)	.00*

1. Coded as follows: 1. Definitely disagree; 2. Generally disagree; 3. Moderately disagree; 4. Moderately agree; 5. Generally agree; 6. Definitely agree; 7. Not specified.

2. Mean.

* The mean difference is significant at the .01 level (Post-Hoc LSD tests).

** The mean difference is significant at the .05 level (Post-Hoc LSD tests).

Table 5b: Attitude toward advertising and TV commercials (Extroverted Vs. Introverted)

	Expressives vs. Drivers	Amiables vs. Analytics	Extroverted Vs. Introverted
Advertising insults my intelligence. ^a	3.40 vs. 3.59 (.02) **	3.41 vs. 3.68 (.00) *	.36
I refuse to buy a brand whose advertising I dislike. ^a	3.60 vs. 3.54 (.49)	3.70 vs. 3.52 (.11)	.48
I avoid buying products advertised on violent TV programs. ^a	3.89 vs. 3.65 (.00) *	3.93 vs. 3.56 (.00) *	.57
TV commercials place too much emphasis on sex. ^a	4.67 vs. 4.25 (.00) *	4.77 vs. 4.32 (.00) *	.00*
Ads for beer and wine should be taken off TV ^a	3.39 vs. 3.11 (.01) **	3.77 vs. 3.03 (.00)*	.02**

1. Coded as follows: 1. Definitely disagree; 2. Generally disagree; 3. Moderately disagree; 4. Moderately agree; 5. Generally agree; 6. Definitely agree.

2. Mean.

* The mean difference is significant at the .01 level (Post-Hoc LSD tests).

** The mean difference is significant at the .05 level (Post-Hoc LSD tests).

REFERENCE

- Alessandra, T. & O'Connor, M.J. (1990). *People Smart*. La Jolla, CA: Keynote.
- Allsop, J. F. (1986). Personality as a determinant of beer and cider consumption among young men. *Personality and Individual Differences*, 7, 341-7.
- Cattell, R. B. (1957). *Personality and motivation structure and measurement*. Yongkers-on-Hudson: World Book Company.
- Chang, C. C. (2001). The impacts of personality differences on product evaluations. *Advances in Consumer Research*, 28, 26-33.
- Cohen, J. B. (1968). The role of personality in consumer behavior. In H.H. Kassarian and T.S. Robertson (ed.), *Perspectives in Consumer Behavior*. Glenview,

Ill.: Scott Foreman., 220-34.

Costa, P. T. & McCrae, R. R. (1988). Personality in adulthood: A 6-year longitudinal study of self-reports and spouse ratings on the NEO personality inventory, *Journal of Personality and Social Psychology*, 54, 853-63.

Cronin, J. J. & Menelly, N. E. (1992). Discrimination vs. avoidance: "Zipping of television commercials," *Journal of Advertising*, 21, 1-7.

Doyle, K. O. (1992). Toward a psychology of money. In K.O. Doyle (ed.), *The meanings of money. American Behavioral Scientist*, 35, 708-24.

Doyle, K. O. (1998). *The social meanings of money and property: In search of a talisman*. New York: Sage.

Doyle, K. O. & Swenson, M. (1995). Measuring temperaments. Unpublished paper manuscript.

Eysenck, H. (1944). General social attitudes, *Journal of Social Psychology*, 19, 207-27.

Eysenck, H. (1953/1970). *The Structure of human personality*. New York: Wiley.

Eysenck, H. J. & Eysenck, S. B. G. (1969). *Personality structure and measurement*. London: Routledge & Kegan Paul.

Eysenck, H. (1991). Dimensions of personality: Sixteen, 5, or 3? -- Criteria for a taxonomic paradigm. *Personality and Individual Differences*, 12, 773-790.

Eysenck, H. (1994). The big five or giant three: Criteria for a paradigm. In Charles F. Halverson, Jr, Geldolph A. Kohnstamm, and Roy Martin. (1994). eds. *The Developing structure of temperament and personality from infancy to adulthood*. Hillsdale, NJ: Erlbaum, pp. 37-51.

Foxall, G.R. & Goldsmith, R.E. (1988). Personality and consumer research: Another look, *Journal of the Marketing Society*, 30, 111-25.

Goldberg, L.R. (1990). An alternative "description of personality": The big-five factor structure, *Journal of Personality and Social Psychology*, 59, 1216-29.

Goldsmith, R. (1983). Psychographics and new product adoption: An exploratory study, *Perception and Motor Skills*, 57, 1071-6.

Henke, P.G. (1990). Potentiation of inputs from the posterolateral amygdala to the dentate gyrus and resistance of stress ulcer formation in rats, *Physiology and Behavior*, 47, 659-64.

James, W. (1890). *Principles of psychology*. Vol. I. New York: Henry Holt.

- Jung, C. (1923). *Psychological types*. New York: Harcourt Brace.
- Jung, C. (1923/1971). Psychological types. In Joseph Campbell. (ed.) *The portable Jung*. New York: Viking. (trans. R.F.C. Hull).
- Kagen, J. (1994). *Galen's prophecy*. New York: Basic Books.
- Krugman, D. M., Cameron, G.T. & White, C.M. (1995). Visual attention to programming and commercials: The use of in-home observations, *Journal of Advertising*, 24, 34-44.
- Malhotra, N. K. (1988). Self concept and product choice: An integrated perspective, *Journal of Economic Psychology*, 9, 1-28.
- Morely, D. (1988). Domestic relations: The framework of family viewing in Great Britain," in J. Lull, ed., *World families watch television*, 22-48, Newbury Park, CA: Sage.
- Merril, D & Reid, R. (1981). *Personal styles and effective performance*. Radnor, PA: Chilton.
- Mills, A. D. & Faure, J. M. (1991). Diversion selection for duration of chronic immobility and social reinstatement behavior in Japanese Quail (*Coturnix Japonica*) Chicks, *Journal of Comparative Psychology*, 105, 25-38.
- Olson, E. B. & Morgan, W. P. (1982). Rat brain monoamine levels related to behavioral assessment, *Life Sciences*, 30, 2095-2100.
- Piirto, R. (1991). *Beyond mind games: The marketing power of psychographics*. NY: American Demographics Books.
- Ratchford, B. T. (1987). New insights about the FCB grid. *Journal of Advertising Research*, 9, 24-38.
- Shah, D. V., Mcleod, J. M., & Yoon, S. H. (2001). Communication, context, and community: An exploration of print, broadcast, and Internet influences. *Communication Research*, 28, 464-476.
- Shrum, L. J., McCarty, J. A., & Lowrey, T. M. (1995). Buyer characteristics of the green consumer and their implications for advertising strategy. *Journal of Advertising*, 24, 71-82.
- Sirgy, J. (1982). Self-concept in consumer behavior: A critical review, *Journal of Consumer Research*, 9, 287-300.
- Sparks, D. C. & Tucker, W. T. (1971). A multivariate analysis of personality and product use, *Journal of Marketing Research*, 8, 67-70.
- Tellegan, A. (1985). Structures of mood and personality and their relevance to

assessing anxiety, with an emphasis on self report. In A.H. Tuma and J.D. Maser (eds). *Anxiety and the anxiety disorder*. Hillsdale, NJ: Lawrence Erlbaum.

Youn, S. & Doyle, K. O. (1999). Toward a cross-disciplinary dialogue about the meaning of money, *Advances in Consumer Research*, 26, 431-438.

Zuckerman, M. (1994). An alternative five-factor model for personality. In Charles F. Halverson, Jr, Geldolph A. Kohnstamm, and Roy Martin (eds). *The developing structure of temperament and personality from infancy to adulthood*. Hillsdale, NJ: Erlbaum, pp. 53-68.

(投稿日期：93年6月17日；採用日期：93年8月5日)