Chronological age versus cognitive age for younger consumers: implications for advertising persuasion.(Report)

Journal of Advertising

| September 22, 2008 | Chang, Chingching |

Models play many important roles in advertising. For example, portrayals of models in advertisements can suggest the lifestyle and image of product users. Moreover, extrinsic features of models, such as race and gender, have been shown to trigger a self-categorization process (Forehand and Deshpande 2001; Maldonado, Tansuhaj, and Muehling 2003). Specifically, when watching commercials or reading advertisements, consumers may categorize the advertised product as "for-me" or "not-for-me" based on these extrinsic cues. Drawing on this line of research, this paper posits that a model's age is also an important cue for consumers making such categorizations. For example, when college students see a model in his or her forties featured in a watch ad, they may infer that the watch is less suited for them than for people in their forties.

Age perception is a multidimensional construct (Barak 1987; Barak and Schiffman 1981). In addition to chronological age (the length of time since one's birth), one important age perception is cognitive age, which refers to how old people perceive

themselves to be (Barak and Schiffman 1981). The discrepancy between chronological age and cognitive age has been widely documented (Barak and Schiffman 1981; Sherman, Schiffman, and Mathur 2001). In marketing literature, cognitive age has also been shown to be an important predictor of consumer behaviors--even as important as chronological age (e.g., Stephens 1991). Most of the extant research has focused on the importance of cognitive age in predicting elderly consumers' behaviors. The role of cognitive age in explaining younger consumers' behaviors has drawn relatively less attention, however.

This study proposes that consumers' own age perceptions will interact with the perceived age of ad models to influence product perceptions ("for-me"/"not-for-me" perceptions and perceived affinity between the self and the brand) and message processing (brand evaluation involvement and self-referencing), which further influence brand evaluations. This proposed process is specified in Figure 1. It is reasoned that consumers not only readily perceive the age of models, but also the congruency between the perceived age of the model and their own age. Given the importance of cognitive age in predicting consumer behaviors, this study explores the influence of the congruency between the perceived age of the ad model and the consumer's chronological age as well as the congruency between the perceived age of the ad model and the consumer's cognitive age on ad persuasion.

This study has three main objectives: first, to explore whether the congruency between perceived model age and consumers' cognitive ages affect the latters' advertising responses; second, to propose and test a model that illustrates the process by which age congruency influences brand evaluations; and, third, to demonstrate that, even for young consumers whose chronological ages do not greatly differ from their cognitive ages, cognitive age is an important predictor of advertising responses.

[FIGURE 1 OMITTED]

COGNITIVE AGE

Cognitive age has been defined as "the age one perceives one's self to be" (Stephens 1991, p. 37). It has been considered to be a state of mind (Schiffman and Sherman 1991) and an important dimension of self-concept (George, Mutran, and Pennybacker 1980; Stephens 1991). The concept of cognitive age is more inclusive than chronological age because it consists of four subdimensions: "feel-age," "look-age," "do-age," and "interest-age" (Barak and Schiffman 1981).

Past research has revealed discrepancies between chronological and perceived cognitive age. It has been widely reported that adults age 53 and older tend to perceive themselves as younger than their actual chronological age (Barak and

Schiffman 1981; Sherman, Schiffman, and Mathur 2001). Relatively less research has addressed the possible differences in age perception for chronologically younger individuals, who were the participants in this investigation.

The discrepancy between chronological and perceived cognitive age also applies to younger people, although the discrepancy is smaller. According to Bei and Chiao (2003), people older than 20 perceived themselves to be younger than their chronological age (mean difference = -2.81 years), whereas teenagers perceived themselves to be older than their actual age (mean difference = 5.16 months). Barak et al. (2001) investigated cognitive age in people ranging from 20 to 59 years old and found that the discrepancy between chronological and cognitive age was smaller for individuals who categorized themselves as young, as compared to individuals who categorized themselves as middle-aged. Although the size of age discrepancies may vary across chronological age segments, past research showed that the percentage of people who perceive themselves exactly at their chronological age is low (Barak and Schiffman 1981). Therefore, the relative importance of chronological age and cognitive age in explaining consumption behaviors and advertising persuasion effects warrants research attention.

COGNITIVE AGE AND CONSUMER BEHAVIORS

Cognitive age perception has been shown to lead to important consequences. It is generally accepted that people not only feel and think according to their cognitive age, but also engage in activities and interests that are consistent with their perceived age (Barak and Gould 1985; Barak and Schiffman 1981). For example, elderly people who think they are younger tend to be less traditional and old-fashioned (e.g., Barak and Gould 1985), are more likely to use the Internet (Eastman and Iyer 2005), and participate more frequently in social, cultural, and educational activities (Goulding and Shankar 2004).

Cognitive age has been regarded as an important predictor of consumer behavior. Even though most research has focused on consumer behaviors of the elderly who have younger cognitive ages (Gwinner and Stephens 2001; Stephens 1991; Wilkes 1992), findings have shown that for consumers across the age spectrum, cognitive age is a significant predictor of consumer behaviors, including dining out, watching television, going to bars and discotheques, playing computer games, and shopping (Barak 1998; Barak and Gould 1985; Barak and Stern 1985). Furthermore, Wei and Bei (2003) reported that regardless of their chronological ages, individuals with younger cognitive ages tend to seek more technology information, use more high-tech products, and have lower anxiety toward new technology. Cognitive age also predicts consumers' brand preferences (Bei and Chen 2005; Wen 2004). One of the possible

reasons past research has focused less on younger generations is that the small discrepancy between their cognitive and chronological ages may suggest that cognitive age plays a less important role in predicting their consumer behaviors or responses to promotional messages than it does for older generations. This study explores whether this is, in fact, the case.

Although cognitive age is significantly associated with chronological age (Wilkes 1992), the relative influences of chronological age and cognitive age on consumer behaviors and ad persuasion have not been compared. Rather than examining the direct influences of cognitive age and chronological age on ad persuasion, this study proposes that, when processing advertising messages, a consumer's age interacts with the perceived age of the ad models and influences consumer responses to advertising messages.

THE ROLE OF SELF IN ADVERTISING PROCESSING

Self-Categorization

Effective advertising always depicts product users and consumption situations that consumers can readily identify (Stephens 1991). However, consumers may not pay attention to an ad unless the portrayed lifestyles and images are congruent with their self-concept. The assumption is that when consumers are exposed to advertising

messages, they implicitly make "for-me" or "not-for-me" self-categorizations based on ad execution. Forehand and Deshpande (2001) argued that self-categorization is a spontaneous and unconscious process that can be triggered by ethnicity, gender, economic status, or age. People use these salient cues to compare themselves with others and categorize themselves based on their similarities and differences. In advertising research, race and gender of advertising models have been shown to be salient cues for self-categorization (Forehand and Deshpande 2001; Maldonado, Tansuhaj, and Muehling 2003). This study proposes that the perceived age of advertising models is also a salient cue that can readily activate a consumer's self-categorization process.

It is important to note that ad-triggered categorization may not be based on consumers' chronological ages. This may partly explain why a content analysis indicated that the elderly are underrepresented in advertising (Carrigan and Szmigin 1999). In addition, elderly consumers have been shown to avoid promotions that are associated with seniors (Tepper 1994). Advertising professionals also believe that featuring elderly models in advertising can alienate consumers (Greco 1987). Although these studies did not specifically explore how consumers respond to advertising featuring models of various ages, these findings may suggest that when processing promotion information or advertising, consumers may rely on their

cognitive ages, rather than their chronological ages, for categorization. This may also apply to young consumers.

Self-Congruency Effects

Prior research has demonstrated that advertising appeals that are congruent with the target audience's self-concept are more effective than incongruent appeals (e.g., Hong and Zinkhan 1995; Wang and Mowen 1997). Self-concepts serve important selective information-processing functions, directing attention to messages that are congruent with the self (Markus and Wurf 1987). Sirgy (1982) proposed that self-consistency and self-enhancement are the forces behind these self-congruency effects. Chang (2005) argued that individuals reinforce self-concepts by attending to self-congruent messages. Identifying with self-congruent messages may also represent a symbolic route to self-completion.

In general, "for-me" self-congruent messages are more persuasive than "not-for-me" self-incongruent messages. For example, both Chang (2000) and Hong and Zinkhan (1995) found that introverted participants respond more positively to ads that depict introverted users, whereas extroverted participants favor ads that portray extroverted users. Also, role portrayals that are consistent with an individual's femininity or masculinity have been shown to be more persuasive than inconsistent portrayals

(Jaffe 1990, 1994). Support for self-congruency effects has been provided by

investigations of the collectivism/individualism dimension as well (e.g., Leach and Liu

1998; Wang and Mowen 1997).

AGE PERCEPTION AND SELF-CONGRUENCY EFFECTS

The congruency between ad models' ages and ad perceivers' cognitive ages may

also influence ad persuasion; however, this issue has not been previously explored in

the literature. A recent study by Wen (2004) examined the effect of the congruency

between participants' perceived age of the product users and participants' own ages

on attitudes toward the brand. Wen proposed that consumers may have developed

knowledge regarding which brand is more appropriate for a particular age segment.

Drawing on the self-congruency effect, she argued that consumers would prefer a

brand whose projected user age was close to their own cognitive (as opposed to

chronological) age. Consistent with this expectation, her findings showed that the

congruency between perceived brand user age and the participant's cognitive age

significantly predicted attitudes toward the brand, yet the congruency between user

age and the participant's chronological age did not. Bei and Chen (2005) replicated

Wen's study and found similar results. These findings showed that the

self-congruency effect was stronger for cognitive age of the consumer than for

chronological age; however, this research did not focus on advertising messages or explore the self-categorization process triggered by advertising models.

Past literature has explored the relative influence of congruency between ad messages and the real and ideal self. For instance, Hong and Zinkhan (1995) found that ads portraying brand images that are congruent with the ad target's ideal self-concept lead to more positive brand attitudes than images congruent with the ad target's real self-concept. Similarly, the author argues here that chronological age is an aspect of the real self, whereas cognitive age is an aspect of the ideal self. Most important, because cognitive age pertains to the age a person feels, looks, and acts, it should be more frequently activated than chronological age. Past research shows that frequently activated concepts are high in accessibility, which is defined as "the readiness with which a stored construct is utilized in information processing" (Higgins and King 1981, p. 71). Therefore, a person's cognitive age, being frequently activated, may be more accessible than a person's chronological age, and is thus more likely to be taken into account. Specifically, it is predicted that the congruency between the ad model's age and the consumer's cognitive age will influence ad persuasion, whereas the congruency between the ad model's age and the consumer's chronological age will not.

Self-Model Age Congruency Effects on Product Perception

"For-Me" Perceptions

According to Chaplin and John, "consumers engage in a matching process to identify

products or brands that are congruent with their self-image" (2005, p. 119). This

matching process is likely to lead consumers to generate "for-me" or "not-for-me"

inferences. The central assumption of this paper is that when consumers are exposed

to advertising featuring models, they make "for-me" and "not-for-me" categorizations

based partly on the match between the perceived age of the model and their own age

perceptions. This assumption will be tested as H1. Previously reviewed literature

indicated that brand preferences are influenced by the congruency between the

perceived brand user's age and the consumer's cognitive age, but not the congruency

between the perceived user's age and the consumer's chronological age (Bei and

Chen 2005; Wen 2004). Moreover, as argued earlier, cognitive age pertains to the

age a person feels, looks, and acts, and should be more frequently activated than

chronological age. The more accessible a self-concept is, the more likely it will

influence information processing (Ybarra and Trafimow 1998). Therefore, this study

predicts that the congruency between the perceived age of the advertising model and

the participant's cognitive age will significantly predict "for-me" perceptions, whereas

the congruency between the perceived age of the model and the participant's chronological age will not.

H1: The congruency between the ad model's age and the participant's cognitive age will encourage participants to infer that the advertised product is for them, whereas the congruency between the ad model's age and the participant's chronological age will not.

Self-Brand Affinity Perception

Past research showed that consumers readily perceive the similarity between ad models and themselves (Whittler and DiMeo 1991). Marketing research has identified the importance of perceived distance by employing multidimensional scaling to show that the perceived distance between a brand and a consumer's ideal point influences product perceptions (e.g., DeSarbo et al. 2002). In parallel, this study argues that consumers will readily perceive the degree of congruency between a model's age and their cognitive age. A high degree of age congruency will enhance the perceived similarity between the model and the self, and will encourage consumers to perceive a shorter distance between the self and the brand. In this paper, this perceived distance between the brand and the self is referred to as self-brand affinity.

H2: The congruency between the ad model's age and the participant's cognitive age will lead to higher levels of affinity between the self and the brand, whereas the congruency between the ad model's age and the participant's chronological age will not.

Self-Model Age Congruency Effects on Ad Processing

Brand Evaluation Involvement

Wheeler, Petty, and Bizer (2005) documented that messages that are congruent with individuals' self-schemas lead to increased message elaboration. Aaker and Lee (2001) found that when individuals' self-concepts are primed, they engage in systematic modes of processing. In line with these findings, it is proposed that when consumers perceive that a model's age is similar to their own cognitive age, they will be more likely to engage in message elaboration. This will result in more brand evaluation involvement, which pertains to the degree to which consumers pay attention to ad messages so as to evaluate the advertised product (Laczniak and Muehling 1993).

H3: The congruency between the ad model's age and the participant's cognitive age will enhance brand evaluation involvement, whereas the congruency between the ad model's age and the participant's chronological age will not.

Self-Referencing

When processing self-congruent ad messages, consumers have also been shown to relate the messages to the self or to engage in self-referencing (Chang 2000, 2005), which can be defined as "a cognitive process whereby individuals associate self-relevant stimulus information with information previously stored in memory to give the new information meaning" (Debevec and Iyer 1988, p. 74). Therefore, it is proposed that when consumers perceive that a model's age is congruent with their cognitive age, they will relate ad messages to their own experiences, and thus engage in greater levels of self-referencing.

H4: The congruency between the ad model's age and the participant's cognitive age will generate greater levels of self-referencing, whereas the congruency between the ad model's age and the participant's chronological age will not.

Self-Model Age Congruency Effects on Brand Attitudes

Ad messages that enhance "for-me" and self-brand affinity perceptions and encourage evaluation involvement and self-referencing should generate more favorable brand attitudes. Similarity between ad models and consumers has been shown to increase trustworthiness, which leads to more favorable brand attitudes (Deshpande and Stayman 1994). Chang (2007) showed that consumers who are

motivated to engage in product evaluations are more likely to pay attention to product

attributes featured in ads and understand the product's benefits. As a result, they

report more favorable brand attitudes. Past research has also shown that

self-referencing enhances brand attitudes (Chang 2005; Debevec and Iyer 1988;

Martin, Lee, and Yang 2004). Thus, it is predicted that self-model cognitive age

congruency will lead to more favorable brand attitudes. In addition, "for-me"

perceptions, perceived affinity between the self and the brand, brand evaluation

involvement, and self-referencing will mediate the relationship between self-model

age congruency and brand attitudes.

H5: The congruency between the ad model's age and the participant's cognitive age

will generate more favorable brand attitudes, whereas the congruency between the ad

model's age and the participant's chronological age will not.

H6: "For-me" perceptions (H6a), perceived affinity between the brand and the self

(H6b), brand evaluation involvement (H6c), and self-referencing (H6d) will mediate

the relationship between self-model cognitive age congruency and brand attitudes.

METHOD

Overview

Participants were exposed to one ad featuring a model, and they reported the age they perceived the model to be. The degree of congruency between the perceived model age and the participant's cognitive age and the degree of congruency between the perceived model age and the participant's chronological age were created to be the independent variables. The method used to create these two variables is explained in a later section that lists the independent variables.

Male and female participants were randomly assigned to read 1 of 12 ads featuring models of their gender (six different Caucasian models and six different Asian models). Therefore, the ad stimuli fell into 1 of 24 categories: 2 (model gender) x 2 (model ethnicity) x 6 (model variation). In each of the four gender x ethnicity categories, six different models were used to reduce the idiosyncrasies associated with using only one model.

Stimuli

Young models have been shown to be more effective for youth-oriented products, whereas older models are more effective for elderly-oriented products (Rotfeld, Reid, and Wilcox 1981). To reduce the confounding influence of the match between the age orientation of the product and the model's age, watches were selected to be the advertised product because they are used by all age groups. Stimulus ads were

created by professional copywriters and designers at an ad agency. The models were prominent, covering the right-hand side of the page. Based on the Eastern Integrated Consumer Profile (2004), the three product attributes of watches that consumers regard as most important were also featured in the ads. They were design, durability, and a large selection. The ad copy was as follows: "Classic design by a Paris designer with aerospace materials. Durable quartz crystal oscillator. A large selection. Make your look more in style." The same ad copy was included in each stimulus ad. To improve external validity, the stimulus ad was inserted between two real filler ads.

Photos of female and male models of Caucasian and Asian ethnicity were selected from the most circulated magazines in Taiwan. Past research has documented that the attractiveness of ad models influences consumers' responses to advertising (for a review, see Joseph 1982). Therefore, two pretests (n = 58 and 40) helped identify 24 models who did not differ in attractiveness.

In the main experiment, participants also rated the attractiveness of the models. An ANOVA (analysis of variance) indicated that the six sets of models did not differ on ratings of attractiveness, $F(5,252) = .64, p = .67$. Models of different genders and ethnicities did not generate different attractiveness ratings either (gender: F[1,252]

= .04,p = .83; ethnicity: F[1,252] = .58,p = .45). Therefore, effects of age congruency, gender, and ethnicity were not confounded with effects of model attractiveness.

Participants

Participants (n = 254; 49.2% male) were recruited from a university in Taiwan. Participants were paid for their participation.

Procedures

At the start of the experimental session, the coordinator informed the participants that the study was composed of two parts. To discourage participants from discerning the actual purpose of the study, they were told that the first part was conducted by professors at the communication college to examine the effects of various ad layouts and formats on information processing. The second part was a value and personality survey for college students designed by a marketing professor. Next, participants read a filler ad, followed by a stimulus ad, and then another filler ad. After reading each ad, participants rated their brand attitudes, evaluation involvement, perceived affinity between the self and the product, degree of self-referencing, and "for-me" perceptions. They then rated the perceived age and attractiveness of the ad model. Finally, they rated the questions in the second part, which was composed of items

assessing the participants' cognitive ages and their birth years and filler questions that pertained to values and personality traits.

Age-Related Measures

Cognitive Age

Participants reported their cognitive age perceptions using the following four items adopted from Barak and Schiffman (1981) and Barak and Gould (1985): "I feel as though I were about age: --;" "I look as though I were about age: --;" "I do most things as though I were about age: --;" and "My interests are mostly those of a person who was about age: --." Cronbach's [alpha] for the scale was .71. Responses to the four items were averaged. The average cognitive age was 19.55 (SD = 4.47), ranging from 10 to 40.

Chronological Age

Participants recorded the year in which they were born. Participants fell into three age categories: 1984 (24.0%), 1985 (10.2%), and 1986 (65.7%). Since the experiment was conducted in December 2005, their birth year was transformed into three age groups: 21.5, 20.5, and 19.5. The average age was 19.32 (SD = 1.26).

Perceived Age of the Model

Participants also wrote down what they perceived to be the age of the featured ad model. The perceived age of the advertising models ranged from 17 to 40, with an average of 25.69 (SD = 4.14).

Independent Variables

High Versus Low Congruency Between Cognitive Age and Perceived Model Age

Following Barak and Gould's (1985) methods, the discrepancy between participants' cognitive ages and model age was calculated by deducting each participant's cognitive age from the perceived age of the model. Larger absolute values thus indicate greater levels of discrepancy. Results showed that the average discrepancy was 6.14, ranging from -15 to 28. The average absolute discrepancy was 7.13, ranging from 0 to 28. The median was 7. Participants were then categorized into high- and low-congruency groups based on a median split of the absolute value of age discrepancy. The difference between the two groups was significant, $F(1, 252) = 313.19$, $p < .01$, $M_{sub.high} = 3.63$, SD = 1.82 (n = 126); $M_{sub.low} = 10.57$, SD = 4.01 (n = 128).

High Versus Low Congruency Between Chronological Age and Perceived Model Age

Self-model chronological age congruency was calculated in the same way as self-model cognitive age congruency. The average discrepancy was 6.36, ranging from -4.5 to 21.50. The average absolute discrepancy was 6.50, ranging from .50 to 21.50. The median was 6.50. Participants were categorized into high- and low-congruency groups based on a median split of the absolute value of the age discrepancy. The difference between the two groups was significant, $F(1,252) = 302.89$, $p < .01$, [M.sub.high] = 3.06, SD = 1.69 (n = 113); [M.sub.low] = 9.25, SD = 3.46 (n = 141).

Ethnicity of the Model

Caucasian models are commonly featured in Taiwan, accounting for 46.81% of models featured in magazine ads (Chang 2008). Therefore, the purpose of including models of different ethnicities is to test whether the congruency between the perceived age of the model and the participant's age will generate similar influences when models are of different ethnicities. However, it is possible that either ethnicity or age will be such a salient categorization cue that it will override the influence of the other factor. No past literature exists to help predict which influence may override the other; therefore, specific hypotheses about ethnicity were not proposed. This variable was included in all the analyses as an independent variable.

Model/Participant Gender

A common practice in advertising is to feature female models when products target women and male models when products target men. The reason is that consumers may infer whether a product is for them based on the gender of the model. To eliminate influences of self-model gender incongruency on product perceptions, female participants were only randomly assigned to the conditions that featured female models, whereas male participants were only randomly assigned to the conditions that featured male models. Gender was included as an independent variable in all the analyses.

Dependent Measures

"For-Me" Perceptions

A scale measuring "for-me" perceptions had not been previously developed, so the following items were created for the purpose of this study. On seven-point Likert scales, participants indicated the degree to which the advertised product was for them using two items: "The advertised product is for me," and "The advertised product suits me." Cronbach's [alpha] for the scale was .76. Ratings for the two items were averaged.

Perceived Affinity Between the Self and the Brand

A measure of self-brand affinity also had to be created for this study. On a seven-point

scale, consumers rated their perceived self-brand affinity using three items: "There is

no distance between me and the brand," "I perceive the brand to be close to me," and

"There is an affinity between the brand and me." Cronbach's [alpha] for the scale

was .78. Ratings for the three items were averaged.

Brand*Evaluation Involvement

On seven-point Likert scales, participants indicated the degree to which they were

involved in product evaluation using the following six items adopted from Laczniak

and Muehling (1993): "I paid attention to what was stated in the ad so I could evaluate

the advertised brand"; "I paid attention to what was stated in the ad to help me

evaluate the brand featured in it"; "I paid attention to what was stated in the ad, so that

I could determine the attributes of the brand featured in it"; "I paid attention to what

was stated in the ad, so that I could determine the benefits of the brand featured in it";

"I paid attention to what was stated in the ad, so that I could rate the quality of the

brand featured in it"; and "I paid attention to what was stated in the ad so that I could

determine what the brand featured in it had to offer." Cronbach's [alpha] for the scale

was .78. Ratings for the six items were averaged.

Self-Referencing

Two items were taken from Burnkrant and Unnava's (1995) self-referencing scale:

"The ad made me think about my personal experiences with the product," and "When

I was reading the ad, I pictured myself using the product portrayed in the ad."

Participants rated the two items on a seven-point Likert scale. Cronbach's [alpha] for

the scale was .75. Ratings for the two items were averaged.

Brand Attitudes

On seven-point Likert scales, participants rated the degree to which each of the

following evaluative items, adopted from Chang (2002), applied to the brand: "good,"

"likable," "pleasant," and "positive." Cronbach's [alpha] for this scale was .90. The

ratings of the items were averaged.

RESULTS

A preliminary analysis showed that the average chronological age for the sample was

19.54 and the average cognitive age was 19.32. When participants' cognitive ages

were deducted from their chronological ages, the discrepancy between cognitive and

chronological age ranged from -11.5 to 21.5, with a mean of .22. In addition, 56.2% of

the sample reported feeling younger than their chronological age, whereas 43.8% reported feeling older than their chronological age.

MANOVA (multivariate analysis of variance) and univariate ANOVAs were conducted to test H1 to H5, and multiple regressions were conducted to test H6. MANOVA indicated that neither cognitive age congruency nor chronological age congruency generated significant effects. However, Huberty and Morris (1989) argued that the failure to obtain a significant MANOVA does not preclude further tests of ANOVAs in the search for hypothesized effects.

ANOVA with cognitive age congruency group, model gender, and model ethnicity included as the independent variables indicated that the high cognitive age congruency group gave higher ratings on the "for-me" perception scale than the low cognitive age congruency group, $F(1, 252) = 4.06$, $p = .05$, $\eta_{p}^{2} = .02$, $M_{high} = 3.55$, $SD = 1.49$, $M_{low} = 3.11$, $SD = 1.34$ (see Table 1). ANOVA with chronological age congruency group, model gender, and model ethnicity included as the independent variables indicated that the high chronological congruency group also generated higher ratings of "for-me" perceptions than the low-congruency group, $F(1,252) = 5.43$, $p = .02$, $\eta_{b}^{2} = .02$, $M_{high} = 3.49$, $SD = 1.34$,

[M.sub.low] = 3.19, SD = 1.49 (see Table 2). Therefore, H1 was only partially

supported.

The main effect of cognitive age congruency on self-brand affinity was also significant,

$F(1, 252) = 4.90$, p = .03, [[eta].sup.2.sub.p] y .02, with the high-congruency group

generating higher ratings than the low group, [M.sub.high] = 4.10, SD = 1.21,

[M.sub.low] = 3.71, SD = 1.16. In contrast, the two chronological age congruency

groups did not rate self-brand affinity differently, $F(1,252) = 3.05$, p = .08,

[[eta].subp.sup.2] = .01, [M.sub.high] = 4.03, SD = 1.21, [M.sub.low] = 3.80, SD = 1.18.

The findings supported H2.

The influence of cognitive age congruency on brand evaluation involvement only

approached the significance level, $F(1, 252) = 3.57$, p = .06, [[eta].sub.p.sup.2] = .01,

with high-congruency participants generating higher ratings than low-congruency

participants, [M.sub.high] = 4.52, SD = 1.31, [M.sub.low] = 4.16, SD = 1.16. In

contrast, the two chronological age congruency groups did not differ in their levels of

brand evaluation involvement, $F(1,252) = .71$, p = .40, [[eta].sub.p.sup.2] < .01,

[M.sub.high] = 4.38, SD = 1.30, [M.sub.low] = 4.31, SD = 1.21. Therefore, H3 was

marginally supported.

Also consistent with expectations, the high cognitive congruency group reported significantly higher self-referencing ratings than the low group, $F(1, 252) = 4.84$, $p = .03$, $\eta_p^2 = .02$, $M_{high} = 3.73$, $SD = 1.58$, $M_{low} = 3.29$, $SD = 1.29$. In contrast, the two chronological age congruency groups did not express different degrees of self-referencing, $F(1,252) = 1.54$, $p = .22$, $\eta_p^2 < .01$, $M_{high} = 3.62$, $SD = 1.40$, $M_{low} = 3.42$, $SD = 1.50$. The results confirmed H4.

Also as predicted, the high cognitive congruency group reported significantly more favorable brand attitudes than the low group, $F(1,252) = 3.81$, $p = .05$, $\eta_p^2 = .02$, $M_{high} = 4.86$, $SD = 1.26$, $M_{low} = 4.58$, $SD = 1.07$. In contrast, the two chronological age congruency groups did not express different brand attitudes, $F(1,252) = 1.53$, $p = .22$, $\eta_p^2 = .01$, $M_{high} = 4.82$, $SD = 1.14$, $M_{low} = 4.63$, $SD = 1.19$. The results confirmed H5.

The mediation models proposed in H6 were tested using procedures described by Baron and Kenny (1986). When dependent variables were regressed on congruency group, model ethnicity, model gender, and the four interaction terms were also

included in the model. The high self-model cognitive age congruency group was coded 1 and the low-congruency group was coded -1.

The results indicated that (1) age congruency group significantly predicted "for-me" perceptions (t = 2.02, p = .05, [beta] = .12); (2) "for-me" perceptions accounted for significant variance in brand attitudes (t = 6.86, p < .01, [beta] = .40); (3) age congruency group significantly predicted brand attitudes (t = 1.95, p = .05, [beta] = .12); and (4) when brand attitudes were regressed on age congruency group and "for-me" perceptions, age congruency group became nonsignificant (t = 1.24, p = .22, [beta] = .07), whereas the influence of "for-me" perceptions remained significant (t = 6.80, p < .01, [beta] = .41). Thus, "for-me" perceptions met the criteria for a significant mediator. H6a was supported.

Four regressions were conducted to test H6b. The results indicated that (1) age congruency group significantly predicted self-brand affinity (t = 2.21, p = .03, [beta] = .14); (2) self-brand affinity accounted for significant variance in brand attitudes (t = 9.49, p < .01, [beta] = .51); (3) age congruency group significantly predicted brand attitudes (t = 1.95, p = .05, [beta] = . 12); and (4) when brand attitudes were regressed on age congruency group and self-brand affinity, age congruency group became nonsignificant (t = .93, p = .35, [beta] = .05), whereas the influence of self-brand affinity

remained significant (t = 9.44, p < .01, [beta] = .52). Thus, self-brand affinity met the

criteria for a significant mediator. H6b was supported.

The results of regressions testing H6c indicated that (1) age congruency group

significantly predicted brand evaluation involvement (t = 1.89, p = .06, [beta] = . 12); (2)

brand evaluation involvement accounted for significant variance in brand attitudes (t =

7.53, p < .01, [beta] = .43); (3) age congruency group significantly predicted brand

attitudes (t = 1.95, p = .05, [beta] = . 12); and (4) when brand attitudes were regressed

on age congruency group and brand evaluation involvement, age congruency group

became nonsignificant (t = 1.27, p = .21, [beta] = .07), whereas the influence of brand

evaluation involvement remained significant (t = 7.24,p < .01, [beta] = .42). Thus,

brand evaluation involvement met the criteria for a significant mediator. H6c was

supported.

The results of regressions testing H6d indicated that (1) age congruency group

significantly predicted self-referencing (t = 2.20, p = .03, [beta] = .14); (2)

self-referencing accounted for significant variance in brand attitudes (t = 7.14, p < .01,

[beta] = .41); (3) age congruency group significantly predicted brand attitudes (t = 1.95,

p = .05, [beta] = .12); and (4) when brand attitudes were regressed on age

congruency group and self-referencing, age congruency group became nonsignificant

(t = 1.17, p = .24, [beta] = .07), whereas the influence of self-referencing remained significant (t = 6.66, p < .01, [beta] = .39). Thus, self-referencing met the criteria for a significant mediator. H6d was supported.

An additional analysis showed that the model's perceived age itself did not account for significant variance in brand attitudes (t = -.31, p = .75, [beta] = -.02). In other words, consumers did not generate negative attitudes toward the brand when the perceived age of the model was high. Moreover, the main effects of model ethnicity on all dependent measures were not significant; neither were four of the five main effects of model gender. The only exception was a significant main effect of model gender on "for-me" perceptions, F(1, 246) = 4.46, p = .04, [[eta].sub.p.sup.2] = .02. When male participants were exposed to ads featuring male models, they generated higher ratings of "for-me" perceptions than when female participants were exposed to ads featuring female models ([M.sub.male] = 3.47, SD = 1.51; [M.sub.female] = 3.18, SD = 1.34). In general, the influences of self-model cognitive age congruency were more robust than the influences of model ethnicity or model gender.

In addition, ANOVA showed that the two-way interactions between cognitive age congruency and model/respondent gender were not significant for any of the dependent measures; neither were most of the two-way interactions between

cognitive age congruency and model ethnicity. This suggested that in general, the influences of self-model cognitive age congruency did not vary as a function of model/participant gender or model ethnicity. The only exception was a significant interaction between self-model cognitive age congruency and model ethnicity for brand attitudes, $F(1, 246) = 8.68$, $p < .01$. Simple effect tests found that when models were Asian, the high age congruency group generated more favorable brand attitudes than the low age congruency group, $F(1, 127) = 12.94$, $p < .01$, [M.sub.high] = 4.99, SD = 1.23; [M.sub.low] = 4.26, SD = .98, whereas when models were Caucasian, high and low age congruency groups did not generate different brand attitudes, $F(1, 119)$ = .76, $p < .39$, [M.sub.high] = 4.48, SD = 1.25; [M.sub.low] = 4.61, SD = 1.12.

DISCUSSION

This study showed that the congruency between the perceived age of the ad model and the consumer's cognitive age could better predict consumer responses to the ad and brand than the congruency between the model's age and the consumer's chronological age. One explanation for this result is that cognitive age is not simply the age people perceive themselves to be, but also the age they feel, look, and act. Therefore, a person's cognitive age may be more accessible and salient than a

person's chronological age, and thus more likely to be taken into account when making judgments.

Models featured in advertising can play important roles in attracting the attention of target consumers. Extrinsic characteristics such as race and gender of the models have been shown to be important cues consumers use to judge whether a product is for them and whether an ad deserves their attention or elaboration. This study extended this line of research to another important cue: age. In general, the influence of self-model cognitive age congruency holds regardless of the ethnicity or age of the ad models. The only exception is that a significant interaction between model ethnicity and self-model cognitive age congruency for brand attitudes emerged, showing that the age congruency effect on brand attitudes emerged only when the models were of the same ethnicity as the participants (e.g., Asian). This significant interaction only emerged for brand attitudes and not other dependent measures, however. It is also important to note that in contrast to the robust effects of self-model cognitive age congruency, none of the main effects of model ethnicity on ad responses were significant. This seems to suggest that model age is a more salient cue than model ethnicity. In other words, for young Asian consumers, a young Caucasian model may be more effective than an older Asian model. Future research can test the relative

salience of model gender, ethnicity, and age in self-categorization or the interaction effects that occur among them when processing advertising messages.

This study specifically examined a process that may be triggered when the perceived age of an ad model is similar to a consumer's cognitive age. In terms of perceptions, high age congruency participants reported higher levels of "for-me" perceptions and affinity between the self and the brand. In terms of processing consequences, participants who perceived a cognitive age congruency between the model and themselves elaborated more on the benefits that the advertised product could offer and engaged in higher levels of self-referencing by relating ad messages to their own experiences. Regression analyses established that these responses mediated the relationship between age perception congruency and brand evaluations.

Some researchers have argued that older models are less appealing than younger models (Carrigan and Szmigin 1999), but this study showed that age of the model itself was not a significant predictor of brand evaluations. This is consistent with past research that has found no influence of ad model's age on consumers' purchase intentions (Greco, Swayne, and Johnson 1997; Nelson and Smith 1988). Nevertheless, this study demonstrated that age does make a difference, but in a way that has not been previously explored. Participants did not rate the product less

favorably simply because the model was older; they rated the product less favorably when the age of the model was highly different from their own cognitive age. Even though this study only explored younger consumers, this finding should apply to consumers of various ages. For elderly consumers, who may perceive themselves as young, featuring a younger model is effective. In contrast, for consumers in their teens, who perceive themselves to be a little bit older, featuring a more mature model can be persuasive.

Past research has shown that consumers' cognitive ages can directly predict their consumer behaviors (Gwinner and Stephens 2001; Wilkes 1992). The influence of cognitive age can also be implicit, however. In addition to exerting direct influences on consumer behavior, cognitive age can interact with the perceived age of an ad model and influence consumer responses to persuasion messages. Human models have been found to appear in 59.83% of advertisements (Chang 2008).

Thus, the findings of this paper have important implications for marketers. They are advised to seriously consider the cognitive age of their target audience when selecting advertising models. First, they should understand the cognitive age of their target consumers; second, they should use models who are perceived to be, but may not necessarily be, close to the target consumers' cognitive age.

Past research concerning cognitive age has focused on elderly consumers. It is important to note, however, that age perception is important for other age groups as well. Self-concepts play a significant role in information processing (Kihlstrom et al. 1988). Therefore, cognitive age, as an important element of self-concept (Barak 1987), should influence responses to persuasive messages just as do other dimensions of self-concept. In other words, the mechanism triggered by the influence of self-concept on information processing or categorization is not limited to the elderly. Therefore, more research on age perception across all age groups is warranted.

As reviewed earlier, age is a multidimensional concept. For example, another age perception that may serve as an important self-categorization cue is age of progeny (Barak and Gould 1985). The products a family needs and the activities in which a family is likely to engage are greatly influenced by the ages of the children in the family. When ads feature a model of a similar age to a child in the family, the parents may pay attention to the ad and elaborate on the messages. More research on age perception is necessary for a fuller understanding of the different possible influences of age perception on responses to advertising.

It is important to note that this study explored the influence of cognitive age only among young consumers, whose cognitive ages and chronological ages did not differ

much (the average absolute discrepancy for this sample was 7.13 years). Yet this study found that the influences of self-model cognitive age congruency, but not those of self-model chronological age congruency, were significant. In other words, even among a group of people for whom the discrepancy between cognitive age and chronological age is small, we can still document the effects of self-model cognitive age congruency. It is likely that self-model cognitive age congruency may be even more important for age groups in which the discrepancy between cognitive age and chronological age is large. Future research should explore the influence of cognitive age for consumers with a wider range of ages. In addition, it is interesting to note that the majority of participants (90.1%) rated their cognitive ages as younger than the perceived age of the model. This may be due to the fact that participants in this study were young. It is also likely, however, that consumers have an "I am younger" self-serving bias. Future research can include a broader age range of models and test whether this kind of bias will emerge with even younger models.

Findings of this study should be interpreted with consideration of its other limitations. First, this study did not directly test the assumption that cognitive age is more accessible than chronological age. Second, this study only concerned one product category. Products vary on different characteristics, which may moderate self-model age congruency effects. For example, the influence of age congruency may be

greater for image products than utilitarian products. Finally, this study was conducted

in Taiwan. Replications of this study across different cultures are strongly

recommended, given that the discrepancy between cognitive age and chronological

age seems to be larger in certain cultures than in others. For example, Uotinen (1998)

found that the discrepancy between cognitive and chronological age was larger for

Americans than for Finns. The utility of cognitive age may be greater in cultures where

this discrepancy is large. Regardless of these limitations, this study sheds light on our

understanding of the role that age congruency plays in influencing consumers' ad

responses and the relative importance of self-model cognitive age congruency versus

chronological age congruency.

REFERENCES

Aaker, Jennifer, and Angela Y. Lee (2001), "'I' Seek Pleasures and 'We' Avoid Pains:

The Role of Self-Regulatory Goals in Information Processing and Persuasion,"

Journal of Consumer Research, 28 (1), 33-49.

Barak, Benny (1987), "Cognitive Age: A New Multidimensional Approach to Measuring Age Identity," International Journal of Aging and Human Development, 25 (2), 109-127.

--(1998), "Inner-Ages of Middle-Aged Prime-Lifers," International Journal of Aging and Human Development, 46 (3), 189-228.

--, and Stephen Gould (1985), "Alternative Age Measures: A Research Agenda," in Advances in Consumer Research, Elizabeth C. Hirschman and Morris B. Holbrook, eds., Ann Arbor: Association for Consumer Research, 12, 53-58.

--, and Leon G. Schiffman (1981), "Cognitive Age: A Nonchronological Age Variable," in Advances in Consumer Research, Jerry C. Olsen, ed., Ann Arbor, MI: Association for Consumer Research, 7,602-606.

--, and Barbara Stern (1985), "Women's Age in Advertising: An Examination of Two Consumer Age Profiles," Journal of Advertising Research, 25 (6), 38-47.

--, Anil Mathur, Keun Lee, and Yong Zhang (2001), "Perceptions of Age-Identity: A Cross-Cultural Inner-Age Exploration," Psychology and Marketing, 18 (10), 1003-1029.

Baron, Reuben M., and David A. Kenny (1986), "The Moderator-Mediator Variable

Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical

Considerations," Journal of Personality and Social Psychology, 51 (6), 1173-1182.

Bei, Lien-ti, and Etta Chen (2005), "The Influences of Cognitive Age on Consumers'

Brand Preferences and Choices," paper presented at the Twelfth International

Conference on Recent Advances in Retailing and Consumer Services Science,

Orlando, July.

--, and Yu-ching Chiao (2003), "An Exploratory Study of the Cognitive Age Versus

Chronological Age of Teens and Adults in Taiwan," paper presented at the Society for

Consumer Psychology Winter Conference, New Orleans, February 20-22.

Burnkrant, Robert E., and H. Rao Unnava (1995), "Effects of Self-Referencing on

Persuasion, "Journal of Consumer Research, 22 (1), 17-26.

Carrigan, Marylyn, and Isabelle Szmigin (1999), "The Portrayal of Older Characters in

Magazine Advertising," Journal of Marketing Practice, 5 (6/7/8), 248-258.

Chang, Chingching (2000), "The Effects of Personality Differences on Product

Evaluations," in Advances in Consumer Research, Susan Broniarczyk and Kent

Nakamoto, eds., Valdosa, GA: Association for Consumer Research, 28, 26-33.

--(2002), "Self-Congruency as a Cue in Different Advertising Processing Contexts,"

Communication Research, 29 (5), 503-536.

--(2005), "Ad-Self-Congruency Effects: Self-Enhancing Cognitive and Affective

Mechanisms," Psychology and Marketing, 22 (11), 887-910.

--(2007), "The Relative Effectiveness of Comparative and Noncomparative

Advertising: Evidence for Gender Differences in Information-Processing Strategies,"

Journal of Advertising, 36 (1), 21-35.

--(2008), "The Global Look: The Effectiveness of Ads Featuring Western Models and

English Brand Names in an Asian Market," Journal of Advertising Research, 48 (2),

199-214.

Chaplin, Lan Nguyen, and Deborah Roedder John (2005), "The Development of

Self-Brand Connections in Children and Adolescents," Journal of Consumer

Research, 32 (1), 119-129.

Debevec, Kathleen, and Easwar Iyer (1988), "Self-Referencing as a Mediator of the

Effectiveness of Sex-Role Portrayals in Advertising," Psychology and Marketing, 5 (1),

71-84.

DeSarbo, Wayne S., Juyoung Kim, S. Chan Choi, and Melinda Spaulding (2002), "A Gravity-Based Multidimensional Scaling Model for Deriving Spatial Structures Underlying Consumer Performance/Choice Judgments," Journal of Consumer Research, 29 (1), 91-101.

Deshpande, Rohit, and Douglas M. Stayman (1994), "A Tale of Two Cities: Distinctiveness Theory and Advertising Effectiveness," Journal of Marketing Research, 31 (1), 57-64.

Eastern Integrated Consumer Profile (2004), "Eastern Integrated Consumer Profile Database," Professional Lifestyle and Consumer Market Research Consultant, available at www.isurvey.com.tw (accessed October 1, 2004).

Eastman, Jacqueline K., and Rajesh Iyer (2005), "The Elderly's Uses and Attitudes Towards the Internet," Journal of Consumer Marketing, 21 (3), 208-220.

Forehand, Mark R., and Rohit Deshpande (2001), "What We See Makes Us Who We Are: Priming Ethnic Self-Awareness and Advertising Response," Journal of Marketing Research, 28 (3), 336-348.

George, Linda K., Elizabeth J. Mutran, and Margaret R. Pennybacker (1980), "The Meaning and Measurement of Age Identity," Experimental Aging Research, 6 (3), 283-298.

Goulding, Christina, and Avi Shankar (2004), "Age Is Just a Number: Rave Culture and the Cognitively Young 'Thirty Something,'" European Journal of Marketing, 38 (5/6), 641-658.

Greco, Alan J. (1987), "Representation of the Elderly in Advertising: Crisis or Inconsequence?" Journal of Consumer Marketing, 6 (1), 37-44.

--, Linda E. Swayne, and E. B. Johnson (1997), "Will Older Models Turn Off Shoppers?" International Journal of Advertising, 16 (1), 27-36.

Gwinner, Kevin P., and Nancy Stephens (2001), "Testing the Implied Mediational Role of Cognitive Age," Psychology and Marketing, 18 (10), 1031-1048.

Higgins, E. Tory, and Gillian King (1981), "Accessibility of Social Constructs: Information-Processing Consequences of Individual and Contextual Variability," in Personality, Cognition and Social Interaction, Nancy Cantor and John F. Kihlstrom, eds., Hillsdale, NJ: Lawrence Erlbaum, 69-122.

Hong, Jae W., and George M. Zinkhan (1995), "Self-Concept and Advertising Effectiveness: The Influence of Congruency, Conspicuousness, and Response Mode," Psychology and Marketing, 12 (1), 53-77.

Huberty, Carl J., and John D. Morris (1989), "Multivariate Analysis Versus Multiple Univariate Analyses," Psychological Bulletin, 105 (2), 302-308.

Jaffe, Lynn J. (1990), "The Effect of Positioning on the Purchase Probability of Financial Services Among Women with Varying Sex-Role Identities," Advances in Consumer Research, vol. 17, Marvin E. Goldberg, Gerald J. Gorn, and Richard W. Pollay, eds., Provo, UT: Association for Consumer Research, 874-879.

--(1994), "The Unique Predictive Ability of Sex-Role Identity in Explaining Women's Response to Advertising," Psychology and Marketing, 11 (5), 467-482.

Joseph, Benoy W. (1982), "The Credibility of Physically Attractive Communicators: A Review," Journal of Advertising, 11 (3), 15-24.

Kihlstrom, John F., Nancy Cantor, Jeanne S. Albright, Beverly R. Chew, Stanley B. Klein, and Paula M. Niedenthal (1988), "Information Processing and the Study of the Self," Advances in Experimental Social Psychology, 21, 145-179.

Laczniak, Russell N., and Darrell D. Muehling (1993), "The Relationship Between Experimental Manipulations and Tests of Theory in an Advertising Message Involvement Context," Journal of Advertising, 22 (3), 59-74.

Leach, Mark P., and Annie H. Liu (1998), "The Use of Culturally Relevant Stimuli in International Advertising," Psychology and Marketing, 15 (6), 523-546.

Maldonado, Rachel, Patriya Tansuhaj, and Darrell D. Muehling (2003), "The Impact of Gender on Ad Processing: A Social Identity Perspective," Academy of Marketing Science Review, 2003 (3), 1-15.

Markus, Hazel, and Elissa Wurf(1987), "The Dynamic Self-Concept: A Social Psychological Perspective," Annual Revieu' of Psychology. 38, 299-337.

Martin, Brett A. S., Christina Kwai-Choi Lee, and Feng Yang (2004), "The Influence of Ad Model Ethnicity and Self-Referencing on Attitudes," Journal of Advertising. 33 (4), 27-37.

Nelson, Susan Logan, and Ruth Belk Smith (1988), "The Influence of Model Age on Older Consumers' Reactions to Print Advertising," in Current Issues and Research in Advertising. James H. Leigh and Claude R. Martin, Jr., eds., Ann Arbor, MI: Division

of Research, Graduate School of Business Administration, University of Michigan, 11, 189-212.

Rotfeld, Herbert J., Leonard N. Reid, and Gary B. Wilcox (1981), "Effect of Ad of Models in Print Ads on Evaluation of Product and Sponsor," Journalism Quarterly, 59 (1), 374-381.

Schiffman, Leon G., and Elaine Sherman (1991), "Value Orientations of New-Age Elderly: The Coming of an Ageless Market," Journal of Business Research, 22 (2), 187-194.

Sherman, Elaine, Leon G. Schiffman, and Anil Mathur (2001), "The Influence of Gender on the New-Age Elderly's Consumption Orientation," Psychology and Marketing. 18 (10), 1073-1089.

Sirgy, M. Joseph (1982), "Self-Concept in Consumer Behavior: A Critical Review," Journal of Consumer Research, 9 (3), 287-299.

Stephens, Nancy (1991), "Cognitive Age: A Useful Concept for Advertising," Journal of Advertising. 20 (4), 37-48.

Tepper, Kelly Y. (1994), "The Role of Labeling Processes in Elderly Consumers' Responses to Age Segmentation Cues," Journal of Consumer Research. 20 (4), 503-519.

Uotinen, Virpi (1998), "Age Identification: A Comparison Between Finnish and North American Cultures," International Journal of Aging and Human Development. 46 (2), 109-124.

Wang, Cheng-lu, and John C. Mowen (1997), "The Separateness-Connectedness Self-Schema: Scale Development and Application to Message Construction," Psychology and Marketing, 14 (2), 185-207.

Wei, Sheng-chuang, and L. Bei (2003), "The Relationship Between Cognitive Age and the Adoption of New Products," paper presented at the Advertising and Public Relations Conference, Taipei, Taiwan, March.

Wen, Xiao-pan (2004), "Women Consumers' Cognitive Age: An Exploration of Cosmetic Products," master's thesis, National Chengchi University, Taipei, Taiwan.

Wheeler, S. Christian, Richard E. Petty, and George Y. Bizer (2005), "Self-Schema Matching and Attitude Change: Situational and Dispositional Determinants of Message Elaboration," Journal of Consumer Research. 31 (4), 787-797

Whittler, Tommy E., and Joan DiMeo (1991), "Viewers' Reactions to Racial Cues in Advertising Stimuli," Journal of Advertising Research. 41 (6), 37-46.

Wilkes, Robert E. (1992), "A Structural Modeling Approach to the Measurement and Meaning of Cognitive Age,"Journal of Consumer Research. 19 (2), 292-301.

Ybarra, Oscar, and David Trafimow (1998), "How Priming the Private Self or Collective Self Affects the Relative Weights of Attitudes and Subjective Norms," Personality and Social Psychology Bulletin. 24 (4), 362-370.

Chingching Chang (Ph.D., University of Wisconsin-Madison) is a professor of advertising, National Chengchi University, Taipei, Taiwan.

TABLE 1
MANOVA and ANOVA Results for Self-Model Cognitive Age Congruency, Model Gender, and Model Ethnicity

| | MANOVA | | ANOVA | | | |
| | | | "For-me" perceptions | | Self-brand affinity | |
	F	P	F	P	F	P
Self-model congruency (C)	1.42	.21	4.06	.05	4.90	.03
Model gender (G)	2.35	.03	4.46	.04	.30	.59
Model ethnicity (E)	.68	.66	2.15	.14	.01	.91

	Brand evaluation involvement		Self-referencing		Brand attitudes	
C x G	.27	.95	.03	.88	.15	.70
C x E	2.47	.03	.78	.38	.02	.89
G x E	4.56	.01	22.65	.01	5.87	.02
C x G x E	1.69	.13	2.25	.14	.73	.39

ANOVA

	Brand evaluation involvement		Self-referencing		Brand attitudes	
	F	P	F	P	F	P
Self-model congruency (C)	3.56	.06	4.84	.03	3.81	.05
Model gender (G)	3.08	.08	.11	.74	.02	.89
Model ethnicity (E)	.23	.63	.91	.34	.33	.57
C x G	.08	.78	.76	.39	.03	.86
C x E	.49	.48	1.86	.17	8.68	.01
G x E	3.52	.06	3.25	.07	.44	.51
C x G x E	1.55	.21	.01	.90	.01	.97

Notes: MANOVA = multivariate analysis of variance; ANOVA = analysis of variance.

TABLE 2
MANOVA and ANOVA Results for Self-Model Chronological Age Congruency, Model Gender, and Model Ethnicity

	MANOVA		ANOVA			
			"For-me" perceptions		Self-brand affinity	
	F	p	F	p	F	p
Self-model congruency (c)	1.18	.32	5.43	.02	3.05	.08

	F	p	F	p	F	p
Model gender (G)	2.69	.02	5.02	.03	.73	.39
Model ethnicity (E)	.86	.51	3.06	.08	.23	.64
C x G	.48	.80	.63	.43	.76	.39
C x E	1.24	.29	1.70	.19	.55	.46
G x E	5.03	.01	20.39	.01	6.90	.01
C x G x E	1.23	.30	.64	.42	.59	.44

ANOVA

	Brand evaluation involvement		Self-referencing		Brand attitudes	
	F	p	F	p	F	p
Self-model congruency (c)	.71	.40	1.54	.22	1.53	.22
Model gender (G)	4.50	.04	.15	.70	.13	.72
Model ethnicity (E)	.01	.98	1.21	.27	.03	.87
C x G	.18	.68	.01	.96	.69	.41
C x E	.42	.52	.34	.56	.09	.77
G x E	5.72	.02	3.65	.08	.31	.58
C x G x E	3.19	.08	.26	.61	.04	.85

Notes: MANOVA = multivariate analysis of variance; ANOVA = analysis of variance.