

The ‘eyes’ have it: how males and females look at models in advertising - an eye-tracker study.

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Abstract

Visual imagery is an important element of advertising design and one aspect of this is the use of attractive models. There is support for the proposition that males and females perceive physical attractiveness in different ways, and hence will view advertising differently. It is reasonable to expect that the physical features of models that are most important to the viewer will be those they spend the most time looking at. This study examines whether there are any differences in male and female fixations when looking at images of male and female models. Eye tracking data was used to measure 21 female and 19 male participants' viewing responses. There were significant differences between genders in fixation time, and viewers did not focus on what they said were the key features. There are practical implications for advertising design and also for researchers in terms of the reliability and validity of self-reported data.

Introduction

The challenges confronting advertising managers are well reported, with developments such as advances in technology, the changing nature of consumer behaviour, and dissipation of audiences making it all the more difficult to create messages that resonate with the consumer of the 21st Century (Eagle & Kitchen, 2000). Consumers want personalised interaction with their brands and thereby co-create value (Payne, Storbacka, & Frow, 2008). Resonance is even more challenged today by the multicultural and global nature of many markets. One of the key elements used by marketers in harnessing this resonance is the visual look and feel of messages, a big part of which is often the human images that are portrayed (Babin and Burns 1997). With few exceptions, highly attractive models are portrayed in the hope of increasing the advertisement's cut through and ultimately its effectiveness.

When looking at visual stimuli of models in advertising, experimental studies generally agree that men and women respond differently (Murnen & Stockton, 1997). However, it is unknown to what extent these differences reflect variation in the central cognitive processing of the stimuli. It is often assumed that when looking at a stimulus, men and women see the same thing. However, what differences in gender do exist when looking at visual stimuli and how do men and women attend to features of advertisements? There are obviously message design implications for the creators of advertising. A complicating factor is that both men and woman are likely to be guarded or circumspect when reporting to researchers on what they view in ads, for example “oh, I mainly look at the model's eyes and smile”. Consequently, this study seeks to add to current knowledge by exploring differences in how consumers believe they look at advertisements, and to see if this matches what actually is observed. The value of using eye-tracker data is that it enables the researcher test what the viewer considers or believes they focus on, against what they actually do. This is valuable knowledge for the designers of advertising messages.

Literature Review

Advertising communicates through verbal and non-verbal elements, however, over the past two decades, researchers have realised the importance of analysing the visual nature of advertising (Constantinides, 2006). Images of models or spokespersons operate as symbols in a visual grammar that creates meanings understood by members of a culture (Warlaumont, 1993). In fact, these visuals are typically regarded as the most easily standardised element in global advertising because there is no translation of body copy required (De Mooij, 1998). Imagery can involve multisensory processing, which may lead to better recall of information (Babin & Burns, 1997). This has been studied extensively in the cognitive psychology field and has drawn increased interest among consumer researchers (Babin & Burns, 1997; Mendelson, Mendelson, & Andrews, 2000). The reliance on imagery has grown over recent decades for a number of reasons, including a reported superiority over words when it comes to learning which is important for brand awareness and brand beliefs (Rossiter and Percy (1980), speed and ease of attention gaining in content dense media, and the drive for global marketing and the development of international brands (Branthwaite, 2002). Further, memory recall is higher if associated with more intensive visual imagery activity rather than under conditions that are less imagery stimulating (LaBarbera, Yorkston, and Weingard 1998).

For decades, marketers have used attractive models to draw attention to and advertise a wide range of brands, products, firms, and industries. From an affect-transfer perspective, research suggests that these attractive spokespersons generate positive affect (Kallen & Doughty, 1984) that would be transferred to consumers' attitudes toward the brand or product, and result in greater purchase intentions (Perlini, Bertolissi, & Lind, 1999). Research also suggests that attractive models can affect consumers' price expectations about products. Tsao, Pitt, and Caruana (2005) report that when consumers lack direct experience with the product, they rely on advertising to form inferential price-quality beliefs.

Attractiveness and Gender

With the recent advent of MRI technology, leading edge studies around the globe are supporting the proposition that the female brain is wired very differently to that of a man. Studies have found that there are four times as many connections between the left and right hemispheres of the female brain, which leads researchers to conclude that women apply emotional memory and feelings to experiences (including pain and negativity) in ways that a man simply cannot. This is a contributing factor in how men and women might view an advertisement. The effects of both male and female models' physical attractiveness on male and female consumers was examined by Debevec and Kernan (1984). They found that advertisers attempting to persuade a male audience may be most effective when using an attractive female model than an attractive male model, average models, or advertisements devoid of a model. Among females, however, results are not supportive of a similar cross-gender strategy when utilising male models.

The emphasis of men's magazines ten years ago was to stress fashion, but now these magazines focus on a new area of male preoccupation: body image (Gordon, 1995). Similar to women's magazines, magazines for men now are filled with articles that concentrate on their readers' worries and inadequacies (Gordon, 1995). As images of men become more prevalent in the media, a new socio-cultural standard of beauty for men seems to have emerged: "hypermasculine, muscled, powerfully shaped body – the Soloflex man, and a question is whether this standard will punish men as much as the super thin standard has punished

women” (Neimark, 1994, p. 32). While physical attractiveness may remain more important to women than to men, some men may place their health at risk, as some women do, in order to attain the cultural ideal. Recently, the pressures on men to obtain and maintain a certain body type have been increasing (Baird & Grieve, 2006). Men are beginning to report being dissatisfied with their body appearance (Vartanian, Giant, & Passino, 2001) and wanting to gain muscle mass (Pope, Phillips, & Olivardia, 2000). Body dissatisfaction experienced through exposure to idealised images of men in the media is only the beginning of possible outcomes such as anabolic steroid use, eating disorders, and muscle dysmorphia (Baird & Grieve, 2006).

Gender, ethnic, and age differences in body-shape dissatisfaction and in the amount of distortion in estimating the attractiveness preferences of the opposite sex have been explored in previous studies, with women repeatedly perceiving their figures as heavier than their ideals and as heavier than the men’s preferences (Demarest and Allen 2000). Among women, discrepancies reflected significant dissatisfaction with their figures and distorted perceptions of men’s preferences. Men were generally satisfied with their own shapes, although their perceptions of male bodies that women would find most attractive were also distorted.

It can be seen from the preceding discussion that visual imagery is an important element of advertising design, and that there is support for the proposition that males and females perceive physical attractiveness in different ways, and hence are likely view advertising differently. It is reasonable to expect that the elements (eyes, arms etc) of the model (male or female) that are most important to the viewer will be those they spend the most time looking at. There is also an indication drawn from previous studies that because of issues of self-perception and body image, men are likely to spend less time looking at other men in ads, and similarly, women are likely to spend less time look at other women in ads. This leads us to the research question: Are there any differences in male and female fixations when looking at images of male and female models? We hypothesise that:

H1: Viewers of advertising will spend greater time looking at the features they consider to be most important.

H2: Viewer gender will be a significant differentiator of how male and female models are perceived.

Methodology

A laboratory experiment was undertaken using eye-tracking to examine the way in which males and females view models in advertising. The total number of respondents examined in the on-campus behavioural laboratory was 40. The sample comprised 21 female and 19 male university students ranging in age from 19-24. The students received 5% class credit in exchange for participation. The aim of their involvement was to experience the application of research which they could then use to inform their major research methods assignment.

The researcher approached the students’ lecturer asking for volunteers. The lecturer extended the invitation to students using the Sona subject pool online management system. The students who signed up for the study were required to read an explanatory statement before proceeding with the study. The Tobii 1750 eye tracker used in the research, samples at a rate of 50Hz. It is accurate to 5mm and unlike most other eye trackers, tracks both eyes allowing greater latitude for movement. A meeting was held with Managing Directors from two leading modelling agencies in Melbourne, Australia prior to the selection of models to discuss

characteristics sought in a model and characteristics considered to be unattractive. The researcher was shown images of attractive male and female models from both agencies. From these discussions, 10 models (6 women: 2 Caucasian, 1 Asian, 1 Polynesian, 1 African/Indian and 1 Middle Eastern; 4 men: 2 Caucasian, 1 Asian, 1 African) between the ages of 21 and 28 years were selected. In return for their participation, the models were rewarded with gift packs that included clothing, jewellery, confectionary and vouchers from local businesses. All the models signed a model release form indicating their consent to participate in this study. The photographic images were designed to reveal front, side and profile views of the models. All photographs were taken by a professional photographer in a studio with a bright, neutral background. The models were introduced to the task in the same way and required to pose in identical stances (Honekopp, 2006). All wore natural makeup and hairstyles and were provided with the same clothing (women: jeans and white singlet; underwear; men: jeans and white t-shirt; underwear). The men were required to be clean shaven. The same lighting was used for all models. Models posed with a neutral facial expression and a slight smile and faced the camera in requested positions: front view, back view and side views. The photographs were uploaded in JPG format to a PC. They were viewed in Adobe Photoshop and small adjustments (cropping and colour) were made to ensure consistency across models.

Eye Tracking

Respondents' attention to the models was then assessed using eye tracking (Duchowski, 2002). After a brief warm-up task, participants viewed images of the models. All participants had normal or corrected-to-normal vision and had not participated in eye-tracking research before. Instructions and stimuli were presented on Tobii monitors in full-colour bitmaps with a 1280-1024-pixel resolution. Participants clicked the mouse to proceed. The assessment was undertaken via the infrared corneal reflection methodology for eye tracking (Duchowski, 2002). During data collection, participants could freely move their heads in a virtual box of approximately 30 centimeters while cameras tracked the position of the eye and head, allowing continuous correction of position shifts. Eye movements consist of sequences of saccades and fixations, periods during which the eye is relatively still and information uptake occurs. The duration of an individual fixation is approximately 200–400 milliseconds. Gaze duration is the sum of individual fixation durations on an advertisement or its elements; both fixation frequencies and gaze durations on the advertisement and its elements are common metrics of visual attention (Duchowski, 2002). Fixation frequencies and gaze durations on the text, pictorial, and brand (logo; brand name in headline, slogan, or body text) as the main ad design elements were retained for each of the 40 participants. Eye tracking is not a new technology, nor is its application to market research. Nevertheless, it is only in recent years that this technology has begun to involve the ease of use that makes it commercially viable. Participants report no discomfort and frequently forget that their eyes are being tracked.

Results

Self report measures

Participants were asked which elements of the face and body they consider to be most important when it comes to being attractive on a scale of 1 (not important) to 7 (extremely important). Table 1 indicates the participants' preferences.

Table 1 Self-reported importance of face and body elements

Feature	Male	Female
Mean (SD)		
Eyes	4.83 (1.012)	4.63 (0.990)

Lips	5.05 (0.921)	4.95 (0.911)
Arms	5.29 (1.007)	5.32 (1.057)
Hands	4.24 (0.995)	4.16 (1.015)
Chest or breasts	4.86 (1.108)	4.74 (1.098)
Waist	4.62 (1.596)	4.37 (1.461)
Legs	5.48 (0.981)	5.32 (0.885)
Feet	3.71 (1.707)	3.47 (1.611)

Whilst male and female respondents reported similar importance to the various physical elements, with both groups indicating arms and legs to be most important, men also found lips to be important.

Eye tracking measures

The next stage of analysis involved the means for eye-tracking variables for males and females, which are presented in Table 2.

Table 2 Actual fixation on face and body elements

	Males	Females	Males	Females
Fixations	Female models		Male models	
Eyes	37.04 (12.56)*	3.53 (1.25)	6.03 (1.25)	10.75 (0.99)*
Lips	3.53 (1.25)	3.83 (1.30)	7.53 (4.87)	16.52 (10.83)*
Arms	1.39 (0.87)	1.16 (0.55)	1.36 (0.87)	4.14 (1.54)*
Hands	1.04 (0.49)	1.14 (0.54)	1.01 (0.45)	1.05 (0.49)
Chest or breasts	15.52 (10.83)*	8.53 (4.87)	10.25 (9.80)*	3.53 (1.25)
Waist	10.60 (0.98)*	6.35 (1.23)	3.23 (1.15)	3.73 (1.32)*
Legs	3.04 (1.05)*	1.14 (0.54)	6.35 (1.25)*	3.55 (1.23)
Feet	2.55 (1.19)	3.58 (1.26)*	2.35 (1.15)	3.53 (1.25)*

*Note: *Male-Female difference significant at $p < .05$.*

It can be seen in Table 2 that differences exist between the self-reported importance of features when compared to the actual fixation time, which indicates that H1: that viewers of advertising will spend greater time looking at the features they consider to be most important is not supported.

Significant differences were found between the time men and women spent looking at various features. When looking at female models, men spent a significantly longer time fixated on the eyes ($M=37.04$, $SD=12.56$), breasts ($M=15.52$, $SD=10.83$), the waist ($M=10.60$, $SD=0.98$), and legs ($M=3.04$, $SD=1.05$). Women spent a significantly longer time looking at female models' feet ($M=3.58$, $SD=1.26$). This could indicate that women do not spend as much time looking at female models as it may result in social comparison which could lead to a decrease in their self-esteem. When looking at male models, men spent a significantly longer time fixated on the chest ($M=37.04$, $SD=12.56$) and legs ($M=37.04$, $SD=12.56$). While women spent a significantly longer time looking at male models' eyes ($M=10.75$, $SD=0.99$), lips ($M=16.52$, $SD=10.83$), arms ($M=4.14$, $SD=1.54$), waist ($M=3.73$, $SD=1.32$), and feet ($M=3.53$, $SD=1.25$). Our second hypothesis H2: that viewer gender will be a significant differentiator of how male and female models are perceived is therefore supported. Although it was not a feature used in the self report section, men spent a significantly greater time fixated on the female groin area ($M=16.49$, $SD=10.72$), and similarly, women spent a significantly longer time looking at the male groin area ($M=32.04$, $SD=11.56$).

Discussion

It is evident from the results that males and females view female models significantly differently. Females primarily focus their attention on the waist, while males scan the whole image, but focus primarily on face and groin. On the other hand, when viewing male models, females scanned the entire image whilst males focussed on the chest and legs. These are interesting results when contrasted to what respondents indicated were the most critical elements of the body in advertising. It is interesting to note that the areas of greatest focus are those that members of the opposite sex may regard as the most sexual areas such as lips, chest, groin, and that this guides their perception of what is attractive.

Research from the Psychology literature suggests that there is significant differences in what men and women consider most attractive (e.g. Law & Labre, 2002), and there is agreement that attractiveness is important to both men and women. Males and females often prioritise physical attractiveness over personality traits such as dependability, emotional stability, and maturity in their choice of mates (Sarwer, Magee, & Clark, 2004).

Another interesting finding is the variation between the self-reported importance of certain physical features and the actual fixation time on those parts is an interesting finding. There is obviously some sensitivity for some respondents in terms of feeling comfortable to say they primarily focus on the sexual regions of the model. Indeed, it may not be a conscious or cognitive process. Nonetheless, from a research design perspective, this is an area worthy of consideration as it calls in to question the reliability and validity of self-reported data on advertising viewing behaviour.

In terms of self-perception and body image, it is difficult to draw a conclusion as to whether this leads people to spend less time looking at images of their own gender (or the one to which they associate). However, we feel this is an important consideration for future research.

The academic implication is strongest in terms of research methodology and interpretation. Merely asking respondents how they perceive or look at ads may actually be misleading. It is clear that practitioners are under increasing pressure as they seek to create effective, resonant messages. Consequently, better understanding how consumers perceive visual imagery and in the case of this study how they perceive models is crucial. This is all the more significant in the current environment of a new visual century (Kahan, 1992) where media rely on visuals to communicate in a cluttered, global media world. There is justification for further research to examine whether the findings of this study hold in different contexts and for different sample groups. Eye-tracking is a valuable extension to the suite of advertising research methods, and it would seem the eyes do have it.

References

- Babin, L. A., & Burns, A. C. (1997). Effects of Print Ad Pictures and Copy Containing Instructions to Imagine on Mental Imagery That Mediates Attitudes. *Journal of Advertising*, 26(3), 33-44.
- Baird, A. L., & Grieve, F. G. (2006). Exposure to Male Models in Advertisements Leads to a Decrease in Men's Body Satisfaction. *Northern American Journal of Psychology*, 8(1), 115-122.
- Branthwaite, A. (2002). Investigating the power of imagery in marketing communication: evidence-based techniques. *Qualitative Market Research: An International Journal*, 5(3), 164-171.
- Brock, T. C. (1967). Communication Discrepancy and Intent to Persuade as Determinants of Counterargument Production. *Journal of Experimental Psychology*, 3(3), 296-309.

- De Mooij, D. M. (1998). *Global Marketing and Advertising: Understanding Cultural Paradoxes*. Thousand Oaks, CA: Sage Publications.
- Debevec, K., & Kernan, J. B. (1984). More Evidence on the Effects of a Presenter's Physical Attractiveness. *Advances in Consumer Research*, 11, 127-132.
- Demarest, J., & Allen, R. (2000). Body Image: Gender, Ethnic, and Age Differences. *The Journal of Social Psychology*, 140(4), 465-472.
- Duchowski, A. T. (2002). A breadth first survey of eye-tracking applications. *Behavior Research Methods, Instruments, & Computers*, 34, 455-470.
- Eagle, L., & Kitchen, P. J. (2000). IMC, brand communications, and corporate cultures. *European Journal of Marketing*, 34(5/6), 667-686.
- Gill, R., Hendwood, K., & McLean, C. (2005). Body projects and the regulation of normative masculinity. *Body & Society*, 11(1), 37-62.
- Gordon, L. R. (1995). Can Men Worship? Reflections on Male Bodies in Bad Faith and a Theology of Authenticity. In B. Krondorfer (Ed.), *Men's Bodies, Men's Gods: Male Identities in a (Post-) Christian Culture* (pp. 235-250). NY: NY University Press.
- Honekopp, J. (2006). Once More: Is Beauty in the Eye of the Beholder? Relative Contributions of Private and Shared Taste Judgments of Facial Attractiveness. *Journal of Experimental Psychology*, 32(2), 199-209.
- Kahan, R. (1992). America in a visual century. *Journalism Quarterly*, 69, 262-265.
- Kallen, D. J., & Doughty, A. (1984). The Self Perception of Weight and Self Esteem with Courtship Behavior. In D. J. Kallen & M. B. Sussman (Eds.), *Obesity and the Family* (Vol. 7, pp. 93-114). USA: The Haworth Press.
- Kimmel, A. J., & Tissier-Desbordes, E. (1999). Males, masculinity and consumption: an exploratory investigation. *European Advances in Consumer Research*, 4, 243-251.
- LaBarbera, P., Yorkston, E. A., & Weingard, P. (1998). Matching the Message to the Mind: Advertising Imagery and Consumer Processing Styles. *Journal of Advertising Research*, 38(September-October), 1-15.
- Law, C., & Labre, M. P. (2002). Cultural Standards of Attractiveness: A Thirty-Year Look at Changes in Male Images in Magazines. *Journalism and Mass Communication Quarterly*, 79(3), 697-711.
- Mendelson, M. J., Mendelson, B. K., & Andrews, J. (2000). Self-Esteem, Body Esteem, and Body-Mass in Late Adolescence: Is a Competence x Importance Model Needed? *Journal of Applied Developmental Psychology*, 21(3), 249-266.
- Murnen, S. K., & Stockton, M. (1997). Gender and self reported arousal in response to sexual stimuli: a meta-analytic review. *Sex Roles*, 37(3-4), 135-153.
- Neimark, J. (1994). The beefcaking of America. *Psychology Today*, 27, 32-72.
- Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36(1), 83-96.
- Perlini, A. H., Bertolissi, S., & Lind, D. L. (1999). The effects of women's age and physical appearance on evaluations of attractiveness and social desirability. *Journal of Social Psychology*, 139(3), 343-354.
- Pope, H. G. J., Phillips, K. A., & Olivardia, R. (2000). *The Adonis complex: The secret crisis of male body obsession*. New York: Free Press.
- Rossiter, J. R., & Percy, L. (1980). Attitude Change through Visual Imagery in Advertising. *Journal of Advertising*, 9(2), 10-16.
- Tsao, H.-Y., Pitt, L. F., & Caruana, A. (2005). The formation of a "high-price-high quality" inferential belief: a study among young buyers of mobile phones and note books. *Asia Pacific Journal of Marketing and Logistics*, 17(1), 50-60.
- Vartanian, L. R., Giant, C. L., & Passino, R. M. (2001). Ally McBeal vs Arnold Schwarzenegger: Comparing Mass Media, Interpersonal Feedback and Gender as Predictors of Satisfaction With Body Thinness and Muscularity. *Social Behavior and Personality: an international journal*, 29(7), 711-723.
- Warlaumont, H. G. (1993). Visual Grammars of Gender: The Gaze and Psychoanalytic Theory in Advertisements. *Journal of Communication Inquiry*, 17, 25-40.