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### Optimising Web Site Design In Europe: Gender Implications From An Interactionist Perspective

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## **Abstract**

### **Purpose**

The World Wide Web grows currently at a rate of 20% per year and dramatic claims are made about the effectiveness of web-based commercial efforts. The centrality of non price mechanisms of differentiation to the perception, enjoyment and ease of use felt using websites is acknowledged but the only statistically rigorous studies of language, form and content have been conducted within a universalist paradigm. This paper reports on an interactionist approach to web aesthetics involving an analysis and comparison of the features contained in a websites created by male and female students across three European countries, the UK, France and Poland, countries at different stages of internet development, to measure the strength of difference between male and female website aesthetics.

### **Methodology**

24 features were analysed in a sample of 180 websites consisting of equal numbers of male and female-produced websites across the three countries. Chi-square analyses were used to identify significant differences.

### **Findings**

A comparison of the ratings of the male and female-produced websites from the three countries produced statistically significant differences on 10 of the features across the three countries including visual, language and navigation issues.

### **Implications**

The findings reported here show that the diversity found in the production aesthetic of male and female-produced sites in the UK is mirrored in the production aesthetic of websites produced in economically diverse countries. Earlier research showed a correlation between production and preference aesthetics and if these earlier findings are extrapolated here, then one could expect web production and preference aesthetics to be matched across Europe. This finding would have significant implications for marketing and would suggest that sites targeted at men and women should be produced in the male and female production aesthetic respectively.

**Keywords:** Websites, Aesthetics, Design, Gender segmentation

## ***The Internet user population***

Globally, the World Wide Web was estimated to double in size roughly every two to three months (Hoffman et al. 1995), with the Internet web usage growing currently at a rate of 20% per year (Van Iwaarden et al. 2004). The Computer Industry Almanac estimates that the Internet user population reached 934 million people worldwide in 2004 and is likely to increase to 1.35 billion in 2007 (Clickz 2005). Moreover, this population is a part of the fastest growing segment within retailing, namely non-store retailing (Dholakia et al. 2002).

In terms of customer profiles, it is acknowledged that its importance, penetration and role will vary in different parts of the world (*ibid.*) and that variations will also occur in terms of the gender of users. In the US, for example, similar proportions of men and women are said to be using the web (Jupiter 2002), with women accounting for about 51% of the total online adult population. In Europe however, female usage of the web is 38% on average (Jupiter 2002) with female usage in the UK at 42%. The average female usage is higher in Sweden (at 46%) but lower in Germany and France (at 39%), Italy (31%), Spain (29%), and Poland (30% as against 37% male usage according to Anon. 2005b). Where frequency and intensity of online usage are concerned, Ono and Zavodny (2003), analysing the data between 1997 and 2001, noted a narrowing of the divide by the year 2000.

## ***Attracting online customers***

The World Wide Web is acknowledged to be an integral part of the Marketing Mix (Strauss and Frost 1999) with a 'powerful' role to play in product promotion, sales and distribution (Melewar and Smith 2003). Where promotion and sales is concerned, its effectiveness relative to traditional media channels is estimated to be such that ten times as many units can be sold with one tenth of the advertising budget (Potter 1994). Further advantages include flexible response, an advantage with shrinking product life cycles (IITA 1994), and the facilitation of customer retention (Van Iwaarden et al. 2004).

Given the high incidence of failure in e-commerce, there is a 'pressing need' (Clarke et al. 2004) to understand the factors that can assist in the successful use of the internet. Where achieving marketing objectives is concerned, success relies on informing, persuading and reminding users (Anderson and Rubin 1986) as well as sustaining traffic i.e. attracting the casual surfer to linger (Schenkman and Jonsson 2000) and revisit the site (Joergensen and Blythe 2003). Given the competition for the user's attention as well as the shift to consumer-controlled interaction (Wedande 2001), it is important to understand the factors that might lead users to stay or move away from a site and understand the extent to which these cohere across different segments of population.

The literature emphasises the centrality of non-price mechanisms of differentiation (Gupta 1995) and the fact that the perceived visual attractiveness and content of the website (Coldsborough 2000) can influence perceptions as to the site's usefulness, enjoyment, ease-of-use (Van der Heijden 2003) and satisfaction (Van Iwaarden et al. 2004). The literature suggests that relevant factors are likely to relate to technical issues (e.g. speed of loading), content (Joergensen and Blythe 2003) or form and appearance (Schenkman and Jonsson 2000; Lavie and Tractinsky 2004). Despite the importance of the visual element and the fact that 'perceived visual attractiveness' is a factor influencing enjoyment of websites (van der Heijden 2003),

graphics are listed as one of ten factors causing dissatisfaction with users in the US and Netherlands (Van Iwaarden et al. 2004). The search for optimum configurations has led Human Computer Interaction (HCI) specialists to attempt to understand the elements (visual and content) in web design that are positively and negatively regarded. We could term this field of interest 'web atmospherics'.

There are analogies with traditional retailing where store atmospherics has become an established field of research study (Bitner 1992) focusing on the store and its contents. With respect to the latter, the physical form of a product is deemed to be important (Bloch 1995) in creating certain effects in buyers (Kotler 1973-4; Bitner 1992) with products perceived as pleasurable thought to be preferred (Yahomoto and Lambert 1994) and used more often than those not perceived as pleasurable (Jordan 1998), leading to enhanced purchasing (Groppel 1993; Donovan et al. 1994).

### *The research into web aesthetics*

Where the field of web atmospherics is concerned, there is a 'paucity of research' (Lavie and Tractinsky 2004) with the limited research anchored in one or more of the following traditions:

1. The tradition of 'experimental aesthetics' (Berlyne 1974). This seeks to identify the isolated elements (or 'collative variables') in the evaluated objects that elicit particular reactions. Thus Schenkman and Jonsson (2000) tested the importance of different measures in the experience of a web page, finding a combination of pictures and beauty to be important constituents in appeal.
2. The exploratory tradition. This evaluates complete and natural stimuli rather than manipulated and artificial ones (Nasar 1988). Thus Schenkman and Jonsson (2000) use 13 commercial web sites as stimuli while Lavie and Tractinsky, (2004) use between one or two websites as stimuli for each of 4 studies.
3. The Kantian view of aesthetics. This assumes aesthetic preferences to be universal (Kant 1792). Given the presumption of universally held values, a number of studies of web aesthetics seek universal rather than segmented values (Schenkman and Jonsson 2000; Van der Heijden 2003; Schenkman and Jonsson 2000; Lavie and Tractinsky 2004).
4. The interactionist position. This sees aesthetic perceptions as a function of individual perception (Porteous 1996) rather than universal values leading to the search for segmented values (Miller and Arnold 2000; Leong 1997; Flanagin et al. 2003; Oser 2003). This paradigm provides the philosophical underpinnings to this research project.

### *The interactionist paradigm*

The interactionist paradigm views aesthetic judgements as a function of individual perception (Porteous 1996) and therefore views data on the perceiver as all-important. An example is feminist research on advertising images which has perceived the ideal spectator as being male and advertising images ideal only insofar as they may appeal to this audience (Schroeder and Borgerson 1998). The interactionist positions links with the 'empathy principle' according to which aesthetic value does not inhere in objects but is the product of empathy between object, perceiver and artist (Crozier and Greenhalgh 1992), a notion that corresponds with that of mirroring. Taking a process perspective, it translates into the view that

products should be shaped around the 'unique and particular needs' of the customer (Hammer 1995). In the field of branding, it translates into the view that there should be congruence between the brand personality and the consumer's self-concept on the basis that purchases are thought to offer a vehicle for self-expression (Karande et al. 1997; de Chernatony et al. 2004).

The importance of the mirroring principle places a premium on the interactionist position over the universalist tradition. Unfortunately, the quantitatively rigorous studies of web aesthetics (Schenkman and Jonsson 2000; Van der Heijden 2003; Lavie and Tractinsky 2004) have been rooted in the universalist position and have consequently failed to test for an interactionist effect. By contrast, the studies that have been conducted in the interactionist paradigm (Miller and Arnold 2000; Leong, 1997; Flanagin et al. 2003; Oser 2003) have serious methodological flaws.

One of these studies (Miller and Arnold 2000) laid claim to the finding that men's pages were shorter than women's. However, the work is riven with methodological flaws including terms not defined, data not quantified, and 'opportunistic and haphazard' (author's words) sampling of pages and no information on the number of sites consulted and rating methods used. The authors' claim that 'gender differences (...) intrude in cyberspace' cannot therefore be relied upon.

The absence of a robust methodology reduces the value of three other studies. Leong (1997) emphasises the importance to women of ease of navigation, but her evidence is anecdotal; Flanagin et al. (2003) draw attention to the fact that opposite-sex credibility evaluations are higher than same-sex credibility evaluations but their conclusions are based on reactions to two websites created by men, a sample too small to offer validity, and moreover, since only created by one gender, unable to illicit reactions to different gender offerings. Finally Oser (2003) provides echoes of Leong in emphasising women's preference for ease of navigation, but her evidence, like Leong's, is anecdotal and therefore lacking validity and reliability.

### ***The importance of gender as segmentation variable***

The absence of credible interactionist research to web aesthetics is the driver to the research reported in this paper. Traditionally, the groupings receiving most attention in interactionist studies have been social class and age, while gender (Hirschman 1983; Kwon and Zmud 1987, Truman and Baroudi 1994) has been sidelined throughout the 1980s and 1990s and recent years. According to a recent study (Wilson 2004), the role of gender and ICT is still 'largely under-theorised' with a 'paucity of treatment of gender issues', on account, arguably, of the belief that 'technology is gender neutral' (ibid.), a belief reinforced in a recent study of the interaction of gender and e-commerce (Dholakia et al. 2002).

The paucity of studies examining the impact of gender is concerning for two reasons. Firstly, it is concerning on account of the belief that the needs, desires and values of women increasingly drive the political and business worlds (Peters 1996; Leyden and Schwartz 1998; Bennett 1998; Mitchell and Walsh 2004). In view of its criticality, the absence of research focused on gender has led to calls for more research into 'gender effects on IT perceptions and outcomes' (Taylor 2004). Secondly, it is concerning on account of the fact that several commentators rate within-culture dimensions like gender as more important in terms of online usage than between-culture dimensions (Brousseau 2003; Shiu and Dawson 2004).

Whilst commentators may be agreed on the arguments for a focus on gender, many have described the problematic nature of such a focus (Caterall and Maclaran 2002). This is both because there is no clear understanding of gender within the field of marketing, and also because 'researchers working from very different theoretical perspectives can disagree on the meanings of the term'. Interpretations can range from the postmodern view that gender is an unproductive dichotomy (Firat 1994), to the evolutionary psychological perspective that plays down the influence of sociocultural factors, emphasising instead the operation of innate factors (Lupotow, Garovich and Lupetow 1995). This latter approach is gaining in popularity in several disciplines and according to recent commentators, should not be overlooked by those researching consumer behaviour, even if this approach restricts the possibilities of social and cultural change (Caterall and Maclaran 2002). The allowance that this approach makes for sex difference means that the approach adopted in this study has its roots nearer to this tradition than to the postmodern tradition. Having said that, a finding of sex difference would not of itself point to an origin in evolutionary history, rather than a sociocultural source.

An earlier study (Moss, Gunn and Heller, in press) pointed the way forward in studying the interactive aesthetic in relation to gender. This study analysed male and female-produced UK student websites on 24 characteristics spanning navigation, language and visual elements and found evidence of statistically significant differences on 12 of these characteristics. One concerned navigation issues, with women's websites statistically more likely than the men's to contain links to fewer sites. Where language was concerned, women's websites showed a statistically greater tendency than the males to employ abbreviations (significant at the  $p < 0.005$  level), self-denigration (significant at the  $p < 0.0001$  level), non-expert (significant at the  $p < 0.0001$  level) and informal language (significant at the  $p < 0.005$  level). Where visual elements were concerned, the female websites were significantly more likely than the male ones, statistically, to use rounded rather than straight shapes (at the  $p < 0.05$  level), to avoid a horizontal layout (at the  $p < 0.0001$  level), to use more colours for typography (at the  $p < 0.0001$  level), informal typography (at the  $p < 0.05$  level), and more of certain specific colours (white, yellow, pink and mauve) for typography ( $p < 0.0001$ ). There are also statistically significant tendencies for the male-produced websites to use crests, and for each gender to depict images of people of their own gender (at the  $p < 0.01$  level).

These differences are sufficiently numerous and significant to be suggestive of a masculine/feminine design production aesthetic continuum, consonant with an interactive model of web aesthetics. It produces evidence of a male and female aesthetic continuum, with men and women selecting elements that are common as well as widely divergent. These findings highlight the limitations of a uniquely universalist approach to web aesthetics.

The findings reported in this paper extend an interactionist study into gender by reporting on a comparison of the web sites produced by men and women in three European countries at differing phases of internet development. The three countries selected are the UK, France and Poland.

### ***A comparison of the Internet culture in UK, France and Poland***

While in terms of electronic markets, certain countries remain at the forefront of the development of e-commerce (e.g. Sweden, Hong Kong, USA, and the UK), others are still at an early or intermediate stage where recognising the benefits that the

Internet can offer is concerned. Within Western Europe, France occupies a midway position, while, within Central Europe, Poland is at an early stage, the typical position in Central Europe where the level of technological development still lags behind that of Western Europe (Durndell and Haag 2002). These differences in e-readiness are spelt out in the Economist Intelligence Unit e-readiness country ranking, a ranking of countries' preparedness for Internet-based opportunities. According to the 2004 ranking (Market Intelligence Unit 2004), the UK is positioned globally in second place with France in eighteenth place and Poland in thirty sixth place out of 64 countries. The extent to which the UK, France and Poland occupy high, intermediate and low internet preparedness is manifest from this.

That the number of internet users varies between these three countries is not surprising. According to Clickz (2005) which claims 'to provide the most accurate and up-to-date statistics on the world Internet-using population available online', the number of Internet users for the year ending 2004 in the UK was 33.11 million (the second higher number of Internet users in the whole Europe), while the number of users in France was 25.47 million (fourth, just after Italy) and in Poland 10.4 million (the highest number of Internet users amongst the new EU countries). Expressed as proportions of their population, these figures translate, in the case of the UK, into 55% of the population (4<sup>th</sup> in the EU), 42.3% in France (10<sup>th</sup> in the EU) and 26.92% in Poland (the fifth lowest penetration rate in the EU).

Although British and French electronic markets appear much better developed than Polish, and almost equally developed, another source (Nationmaster.com 2003) estimates that a great variation exists in the number of websites per 1000 population in these two Western countries (data for Poland is not included here since this country did not make the top 50):

**Table I:** Number of websites per 1000 population (Nationmaster, 2003)

Country	Description
United Kingdom	64.2 per 1000 people
France	10.5 per 1000 people

The data discussed above reveals the British electronic market to be one of the most developed in the European Union, with the French e-market catching up with the best countries in the EU. The Polish e-market, on the other hand, although experiencing rapid development, still lags behind Western standards (for example only 17% of e-retailers accepts payments by cards; Anon. 2005c) and still remains on the edge of the new EU countries' e-markets. However, it is important to note that the value of online B2B and B2C transactions in Poland in 2003 increased 50%, with 0.5 million people shopping online and 1.5 million using online banking (Anon. 2005a). Therefore the potential for further expansion and development is great.

## *Methodology*

In each of the UK, France and Poland, 30 male and 30 female websites originated by students in a single Higher Education located in each country were randomly selected, producing an overall sample of 180 websites. The students were not design students but undergraduate or postgraduate students across a range of disciplines (the case of the UK and Polish students). In the case of the French students, they were undergraduates studying Business Studies. The random selection of sites was affected by selecting alternate sites from an alphabetical list of

student websites, until equal numbers of male and female websites had been selected (totalling 60 websites) for each country. Each site was then rated against 24 features suggested in Moss, Gunn and Heller (in press) and described below (with additional features: abbreviations in the UK and moving objects/graphics v. stationery in France and Poland). Chi-square analyses were used to identify significant differences across the three countries surveyed in the distribution of the twenty four features analysed. The features analysed in this research included issues related to navigation, language and visual issues. These are detailed below.

## Navigation

Oser (2003) and Leong (1997) suggest a female preference for ease of navigation said to be linked to a preference for navigating a small number of pages. This measure was broken down into a number of elements including:

1. number of separate sites to which each site was linked,
2. presence of contents page,
3. presence of site map,
4. level of consistence across pages,
5. number of subjects covered.

## Language

One body of work (Tannen 1996) speaks of a male and female style of discourse, with males tending to a competitive style (emphasising their status and expertise) and females to a less overtly competitive style. In order to test the extent to which these differences are reflected on the web, five factors were rated:

1. presence of welcome to the site,
2. amount of self-denigration,
3. amount of expert language used,
4. inclusion of references to own achievements,
5. register of the language, serious v. light-hearted themes.

## Visual elements

A number of factors relating to visual elements were tested with criteria taken from earlier work on the topic (Moss 1995 and 1999). Two main criteria were used: thematic content, and non-thematic content. On the first, the literature discusses six main features (*ibid.*):

1. the number of photos,
2. choice of male or female images,
3. style of photos – formal or informal snapshots,
4. inanimate v. animate themes,
5. self-propelling v. stationary objects,
6. the use of Institution's crest v. own logo.

Where non-thematic content is concerned, eight main features are discussed in the literature (*ibid.*):

1. extent to which design elements appear either three-dimensional or two dimensional or both,
2. predominance of straight or rounded lines or a mixture of both,



3. appearance, or not, of a horizontal line in the layout,
4. the number of colours used in the typeface, whether a single colour, two to three colours or four to six colours,
5. number of colours used in the background or frame, whether black or white, or a single non black or white colour, or two or more non black or white colours,
6. regularity or irregularity of the typography (regularity denoting evenness in spacing and height, and following a horizontal line),
7. type of typeface colours used and whether blue and black (exclusively), or pink, mauve and yellow,
8. lightness/darkness of site.

## Results

The results (see Table below) show significant differences between the male and female-produced sites across all three countries:

**Table II:** Factors showing significant differences between the male and female-produced websites in the UK, France and Poland

Variable Tested	Significant
Does it have a site map?	$\chi^2 = 13.891$ , df = 1; p < 0.01
Denigration of self or task at hand	$\chi^2 = 22.550$ ; df = 1; p < 0.01
The use of expert language	$\chi^2 = 22.848$ ; df = 1; p < 0.01
Reference to own achievements	$\chi^2 = 6.792$ ; df = 1; P < 0.05
Are shapes on page rounded or straight?	$\chi^2 = 26.814$ ; df = 3; p < 0.01
Is there a conventional layout employing horizontal lines across the page?	$\chi^2 = 18.336$ ; df = 3; p < 0.01
The range of colours used in the typeface	$\chi^2 = 24.027$ ; df = 3; p < 0.01
Are the images inanimate or animate?	$\chi^2 = 19.163$ ; df = 3; p < 0.01
What gender are the images used?	$\chi^2 = 36.473$ ; df = 3; p < 0.01
What tone do the words used display?	$\chi^2 = 24.886$ ; df = 3; p < 0.01
What style are the pictures that are used?	$\chi^2 = 18.857$ ; df = 3; p < 0.01
What is the style of typeface?	$\chi^2 = 9.423$ ; df = 1; p < 0.05
What colour of typeface predominates?	$\chi^2 = 12.323$ ; df = 2; p < 0.05

These results show statistically significant differences across ten variables, with highly significant differences (at the level of 0.001) across seven of these.

## ***Discussion***

An earlier study by Moss, Gunn and Heller (in press) rated male and female-produced UK student websites on 24 characteristics and found evidence of statistically significant differences on 12 of the rating characteristics. The findings from the three country study reported here show that there are statistically significant differences on 10 out of those 12 characteristics in websites created by men and women in the UK, France and Poland. The strength of the male and female differences across three disparate cultures with widely different e-readiness bears out earlier findings that the within-culture dimensions (of which gender is an example) may be more important in terms of online usage than between-culture dimensions (Brousseau (2003; Shiu and Dawson 2004). The results show that, pace previous thinking (Brousseau 2003), segmentation variables can override the effects of differences in Internet development. This is in line with Kapferer's view (1993) that marketing messages do not need to be varied where similar segments of the market are appealed to. The results also strengthen the importance of the interactionist position.

The earlier work on web aesthetics (Schenkman and Jonsson 2000; Lavie and Tractinsky 2004) adopted a universalistic rather than interactionist approach to aesthetics, an approach reflected in their methodologies (provision of a limited range of aesthetic stimuli) as well as in their results (both studies concluded with the importance of universal features such as 'beauty' and 'visual clarity'). Wilson (2004) has referred to the assumption in ICT literature that 'technology is gender neutral' and an interactionist approach comparing male and female-produced websites across three countries is one way of questioning the basis for such an assumption.

The results presented here and elsewhere (Moss, Gunn and Heller, in press; Moss, Gunn and Kubacki 2005) produce a picture that is somewhat at odds with the universalist view. They show that web aesthetics are gendered across divergent cultures. These findings highlight the importance of an interactionist approach to web aesthetics. Taken with earlier findings (Moss 1995; Moss and Colman 2001) that the production aesthetic is mirrored by a preference aesthetic (with women preferring the design aesthetics typical of women's design productions, and men preferring the design aesthetics typical of men's design productions), the implications for web design across Europe are considerable. It is therefore anticipated that differences between males and females in frequency and intensity of usage online (Ono and Zavodny 2003) might be caused by the fact that even websites targeted at females are frequently designed by males according to the male production aesthetic (Moss, Gunn and Kubacki 2005).

## ***Practical applications for commercial web design***

Data on consumer behaviour indicates that men and women both have important roles as consumers. One estimate has women in the United States dictating at least 60% of consumer spending power (Carter 1997) whilst another (Davis and Riguax 1974) shows that across all sectors and across all stages of spending, women are dominant in 72% of cases. In the household sector (food, clothing, furnishings and kitchenware), women's role in decision-making is said to be dominant, while in the insurance sector, men are said to have a dominant role in decision making.

The significance of women's overall involvement in spending decisions is corroborated by data on men and women's involvement in household spending. In the 1990s, women were likely to have some degree of involvement in the spending of household income in 72% of cases, and sole control in 12% of cases (Vogler and Pahl 1993). More recent research (Pahl 2000), analysing data from the 1993-4 Family Expenditure Survey (FES), has revealed spending patterns in couples. Where both the man and the woman are in full time employment, women are responsible for 76% of spending on food, 59% on household goods, 49% on holidays and 38% on motor vehicles. Amongst non-working women, the involvement in food spending increases to 84%, but reduces somewhat in the other areas.

Statistical analysis of the UK's Family Expenditure Survey reveals that while men predominate as purchasers of alcohol, diesel oil, garden tools, petrol, records and cassettes, sports goods and video cameras, women predominate as purchasers of books, china and glass, cosmetics, kitchen equipment, jewellery, photographic equipment, small electrical goods, stationery and toys. Products for which there are no significant differences in purchasing propensity by sex included telephones, and major electrical goods. The polarisation of markets by gender is apparent also from data from the Target Group Index, an annual survey of the purchasing patterns of UK adults. This shows that males are significantly more likely to purchase computers, fridges, washing machines and SLR cameras than females, and females more likely to purchase chocolate, china and glass, electric kettles and furniture.

The results of the comparative study reported in this paper reveal that the websites of men and women show statistically significant differences across Europe. Taken with earlier findings showing that the dual aesthetic is manifested not simply in designed objects but also in design preferences, with each gender showing a statistically significant tendency to prefer the design aesthetic of its own gender (Moss, 1995; Moss and Colman 2001), and given that websites should be shaped around the 'unique and particular needs of the customer' (Hammer 1995), there are lessons for the design of websites targeted at particular market segments. As previous work has noted (Wilson 2004), reference to gender differences need not imply an essentialist stance and further research would be needed to establish the origin of these differences, and whether and to what extent socialisation plays a role in producing gendered designs.

## **Conclusions**

The results presented in this article are based on an intensive analysis of a normal data set of 180 sites and suggest that there are statistically highly significant differences between male and female-originated web sites across three countries. These differences are in ten out of 24 factors rated and persist across national boundaries and in countries with web development at varied levels. The mirroring principle suggests that the efficacy of tools or messages can be maximised by ensuring that they contain features that mirror the preferences of the target market. Previous research on design shows a statistically significant tendency to prefer designs originated by someone of one's own gender (Moss 1995; Moss and Colman 2001) and in the case of web design, this would mean designing web pages so that they contain features that typify the web productions of the target market in terms of the market segment of gender.

### *Further work*

One area for future research would be to perform preference tests amongst men and women such as to examine their preferences as between websites produced according to the male and female production aesthetic. It would also be useful to examine leading websites in the most popular e-retailing sectors, and ascertain the extent to which their sites employ the male or female web production aesthetic. These results could be mapped against the target market to reveal the likely aptness and appeal of those websites. A further area for future research would be to examine the origin of the differences reported here, and seek to discover whether and to what extent socialisation plays a role in producing the gendered differences in web design noted here.

## References:

- Anderson, P M and Rubin, L G (1986), *Marketing communications*, Englewood Cliffs, NJ: Prentice-Hall, Inc
- Anon. (2005a), 'E-gospodarka w Polsce 2003', [www.egospodarka.pl](http://www.egospodarka.pl), 17 September 2004, accessed: 11/03/2005
- Anon. (2005b), 'Internet w Polsce', [www.egospodarka.pl](http://www.egospodarka.pl), 8 February 2005, accessed: 11/03/2005
- Anon. (2005c), 'Polskie sklepy internetowe 2005', [www.egospodarka.pl](http://www.egospodarka.pl), 21 February 2005, accessed: 11/03/2005
- Bennett, O (1998), 'Warrior or Madonna: which will you be?', *The Guardian*, 28 December, pp.8-9
- Berlyne, D (1974), 'The new experimental aesthetics', In Berlyne, D (ed.) *Studies in the new Experimental Aesthetics: Steps toward an Objective Psychology of Aesthetic Appreciation*, Washington Hemisphere Pub, Washington, DC
- Bitner, M J (1992), 'Servicescapes: the impact of physical surroundings on customers and employees', *Journal of Marketing*, 56, April, pp.55-71
- Bloch, P H (1995), 'Seeking the ideal form: product design and consumer response', *Journal of Marketing*, 59, pp.16-29
- Brousseau, E (2003), 'E-Commerce in France: did early adoption prevent its development?', *Information Society*, 19 (1), pp.45-57
- Carter, M. (1997), No advertisement for equality, *The Independent*, Media, 21 July, p.8
- Caterall, M and Maclaran, P (2002), Gender perspectives in consumer behaviour: an overview of future directions, *The Marketing Review*, 2, pp. 405-425.
- Clarke, S and Doherty, N (2004), 'The importance of a strong business-IT relationship for the realisation of benefits in e-business projects: the example of Egg', *Qualitative market Research: an International Journal*, 7 (1), p.58
- ClickZ.com (2005) 'Population explosion!', 26 January 2005, [http://www.clickz.com/stats/web\\_worldwide/article.php/151151](http://www.clickz.com/stats/web_worldwide/article.php/151151); accessed: 04/02/2005
- Coldsborough, R (2000), 'Stickier sites: a primer', *Restaurant Hospitality*, 87 (7), pp.86-88
- Davis, H, and Rigaux, B (1974), Perception of marital roles in decision processes, *Journal of Consumer Research*, 1, pp.51 -62

Dholakia, R and Uusitudo, O (2002), 'Switching to electronic stores: consumer characteristics and the perception of shopping benefits', *International Journal of Retail and Distribution Management*, 30 (10), pp.459-469

Crozier, W. and Greenhalgh, P. (1992), 'The empathy principle: towards a model for the psychology of art', *Journal for the Theory of Social Behaviour*, 22, pp.63-79

De Chernatony, L., Drury, S. and Segal-Horn, S. (2004), "Identifying and sustaining services brands' values", *Journal of Marketing Communications*, Vol.10 No.2, pp.73-94.

Donovan, R J, amd Rossiter, JR, Marcoolyn, G and Nesdale, A (1994), 'Store atmosphere and purchasing behaviour', *Journal of Retailing*, 70 (3), pp.283-294

Durndell, A and Haag, Z (2002), 'Computer self efficacy, computer anxiety, attitudes towards the Internet and reported experience with the Internet, by gender, in an East European sample', *Computers in Human Behaviour*, 18 (5), pp.521-535

Firat, F A (1994), Gender and consumption: transcending the feminine?, in J Costa (ed), *Gender issues and consumer behaviour*, Thousand Oaks, CA, Sage, 205-228

Flanigan, A. and Metzger, M. (2003), The perceived credibility of personal web page information as influenced by the sex of the source, *Computers in Human Behaviour*, 19, 6, 683-701

Groppel, A (1993), 'Store design and experience orientated consumers in retailing: comparison between the United States and Germany', In Raaij, W F van and Bamossy, GJ (eds), *European Advances in Consumer Research*, 1, pp.99-109

Gupta, S (1995), 'HERMES: A research project on the commercial uses of the World Wide Web', <http://www.cc.gatech.edu/gvu/user>

Hammer, M (1995), *Reengineering the Corporation*, Nicholas Brealey Corporation, London

Hirschman, E C (1983), 'Aesthetics, ideologies and the limits of the marketing concept', *Journal of Marketing*, 47, pp.45-55

Hoffman, D, Novak, T, and Chatterjee, P (1995), 'Commercial scenarios for the web: opportunities and challenges', *Journal of Computer Mediated Communication*, Special issue on Electronic commerce, December, [http://www.ciadvertising.org/studies/student/96\\_fall/burnett/hoffman.html](http://www.ciadvertising.org/studies/student/96_fall/burnett/hoffman.html)

Institute for Information Technology Applications (IITA)(1994), *Electronic commerce and the NII*, Information Infrastructure Technology and Applications Task Group, National Coordination Office for High Performance Computing And Communications, February, pp.13-14

Interactive Advertising Bureau Polska (IABP) (2004), Report 'Polski rynek internetowy po dwóch kwartałach 2004r.', 9 September 2004

Joergensen, J, and Blythe, J (2003), 'A guide to a more effective World Wide Web', *Journal of Marketing Communications*, 9, pp.45-58

Jordan, P W (1998), 'Human factors for pleasure in product use', *Applied Ergonomics*, 29, pp.25-33

Jupiter Communications (2002), Market Forecast Report 'Portrait of the Online Population through 2007', August 2

Kant, E (1978), *Critique of judgement*, translated by J.C. Meredith, Oxford, Clarendon Press

Kapferer, J-N (1997), *Strategic Brand Management: Creating and Sustaining Brand Equity Long Term*, Kogan Page, London

Karande, K, Zinkhan, G M and Lum, A B (1997), 'Brand personality and self concept: a replication and extension', *American Marketing Association*, Summer Conference, pp.165-171

Kotler, P (1973-4), 'Atmospherics as a marketing tool', *Journal of Retailing*, 49 (Winter), pp.48 -63

Kwon, T H and Zwud, R W (1987), 'Unifying the fragmented models of Information Systems', In *Critical Issues in Information Systems Research*, (Ed) Hirscheim, R A, John Wiley & Sons, New York

Lavie, T and Tractinsky, N (2004), 'Assessing dimensions of perceived visual aesthetics of Web Sites', *Journal of Human-Computer Studies*, 60, pp.269-98

Leong, K (1997), 'Women gaining clout online', *Internetweek*, 686, p.107

Leyden and Schwartz (1998), 'Thinking out of the box', paper presented at the Zurich Group Symposium, EMAP, London

Lupotow, L.Garovich, L. and Lupetow, M. (1995), The persistence of gender stereotypes in the face of changing sex roles: evidence contrary to the sociocultural model, *Ethology and Sociobiology*, 16, pp. 509-530.

Market Intelligence Unit (2004), 'The 2004 e-readiness unit rankings', [http://eb.eiu.com/site\\_info.asp?info\\_name=err2004](http://eb.eiu.com/site_info.asp?info_name=err2004)

Melewar, T and Smith, N (2003), 'The internet revolution: some global marketing implications', *Marketing, Intelligence and Planning*, 2 (6), pp.363-9

Miller, H and Arnold, J (2000), 'Gender and home pages', *Computers and Education*, 34 (3-4), pp.335-339

Mitchell, V-W, and Walsh, G (2004), 'Gender differences in German consumer decision-making styles', *Journal of Consumer Behaviour*, 3 (4), pp.331-347

Moss, G (1995), 'Differences in the design aesthetic of men and women: implications for product branding', *Journal of Brand Management*, 3 (3), pp.51-61

Moss, G (1999), 'Gender and consumer behaviour: further explorations', *Journal of Brand Management*, 7 (2), pp.88-100

Moss, G and Colman, A (2001), 'Choices and preferences: experiments on gender differences', *Journal of Brand Management*, 9 (2), pp.89-99

Moss, G, Gunn, R and Heller, J (2005), 'Some men like it black, some women like it pink: consumer implications of differences in male and female website design', *Journal of Consumer Behaviour*, in press.

Moss, G., Gunn, R and Kubacki, K (2005), "Angling for beauty: implication of an interactive aesthetic for the fishing and beauty industries", The 5<sup>th</sup> American Marketing Association/Academy of Marketing Conference Joint Biennial, Dublin Institute of Technology, 5-7 July 2005.

Nasar, J L (1988), *Environmental Aesthetics: Theory, Research and Applications*, Cambridge University Press

Nationmaster.com (2003), 'Websites per 1000 population', [www.nationmaster.com](http://www.nationmaster.com), accessed: 28/03/2005

Ono, H and Zavodny, M (2003), 'Gender and the Internet', *Social Science Quarterly*, 84 (1), pp.111-121

Oser, K (2003), 'Marketing well to women pays off', *Direct*, December, 15, 16, 20-20

Pahl, J (2000), The gendering of spending, *Radical Statistics*, 75, Autumn, pp.38-48

Peters, G (1996), *Beyond the next wave*, Pearson Professional, London

Porteous, J D (1990), *Environmental Aesthetics: Ideas, Politics and Planning*, Routledge, London

Potter, E (1994), WELL topic 'Commercialisation of the World Wide Web' in the Internet conference on the WELL, November 16

Precision Marketing (2003), 15 (14) 17 January, p.9

Schenkman, N and Jonsson, F (2000), 'Aesthetics and preferences of web pages', *Behaviour and Information Technology*, 19 (5), pp.367-377

Shiu, E C C and Dawson, J A (2004), 'Comparing the impacts of Internet technology and national culture on online usage and purchase from a four-country perspective', *Journal of Retailing and Consumer Services*, 11, pp.385-394

Schroeder, J and Borgerson, J (1998), 'Marketing images of gender: a visual analysis', *Consumption, Markets and Culture*, 2 (2), pp.105-231

Strauss, J and Frost R (1999), *Marketing on the Internet: Principles of Online Marketing*, Prentice-Hall, Upper Saddle River, NJ

Tannen, D (1996), *You just don't understand me*, New York, Harper Collins

Taylor, W A (2004), 'Computer-mediated knowledge sharing and individual user differences: an exploratory study', *European Journal of Information Systems*, 13 (1), pp.52-64

Truman, G E and Baroudi, J J (1994), 'Gender differences in the Information Systems managerial ranks: an assessment of potential discriminatory practices', *MIS Quarterly*, 18 (2), pp.129-141



Van Iwaarden, J, van der Wiele, T, Ball, L and Millen, R (2004), 'Perceptions about the quality of web sites: a survey amongst students at Northeastern University and Erasmus University', *Information and Management*, 41 (8), pp.947-959

Van der Heijden, H (2003), 'Factors influencing the usage of websites: the case of a generic portal in the Netherlands', *Information Management*, 40 (6), pp.541-549

Vogler, C and Pahl, J. (1993), 'Social and Economic Change and the organisation of money within marriage', *Work, Employment and Society*, 7 (1), pp.71-95

Wedande, G, Ralston, L and t'Hul, S van (2001), 'Consumer interaction in the virtual era: some solutions from qualitative research', *Qualitative Market Research: an International Journal*, 4 (3), pp.150-159

Wilson, M (2004), 'A conceptual framework for studying gender in information systems research', *Journal of Information Technology*, 19 (1), pp.81-92

Yahomoto, M and Lambert, D R (1994), 'The impact of product aesthetics on the evaluation of industrial products', *Journal of Product Innovation Management*, 11, pp.309-324