

Thesis for the Master in Consumer & Behavior Psychology

Communicating Harmony versus Conflict in an Online Environment:

The Effects of Portraits & Shape on Website User Response

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ABSTRACT

This paper addresses the impact of communicating harmony and conflict through portraits and shape on the evaluation and response of a website. Based on research it was hypothesized that it is possible to communicate a symbolic meaning of harmony or conflict via design factors that in turn influence the users response. Furthermore it is argued that both design properties affect the website user individually but also in interplay. In addition, the influence of social presence and self-construal is considered. To test the predictions, two experimental studies were conducted, whereas the second research strives for a clarification of the results found in the first study. Students were asked to evaluate an informational website about study choices that was either created as harmonic or as conflict oriented. The present paper makes significant contribution to the potential of communicating symbolic meanings by portraits and the shape on a website. It further stresses the importance to understand the different working of both design cues, especially with respect to an enhancement of the websites usability. Using harmonic portraits on a website turned out to be the strongest individual predictor of an enhancement of the user's attitude and perception of benevolence. These effects proved to be mediated by the perception of social presence. With respect to usability, an angular shape affects the usability of the website in the strongest way. In addition, the current research gives an insight into the interplay of both design factors primarily in terms of building up the users feeling of benevolence and the perception of professionalism in an online environment. Results from both studies provide support for the importance of design factors within the online environment and suggest an impact of personal differences, like self-construal, on a websites evaluation and response. Additionally, this paper gives impulse to further research and practical implications.

Communicating Harmony versus Conflict in an Online Environment:

The Effects of Portraits & Shape on Website User Response

Online-presence is widely-used by companies to increase their success and attention. Thereby and especially with a view to the similarity of existing services and products on the internet the usage of the right online atmosphere has become an important marketing strategy. The creation of an online environment that evokes specific emotions in the user and potential customer is essential today.

A successful strategy to increase the satisfaction with and the feeling of being addressed by an online environment is a good design concept. The design is able to grab the user's attention, revalue a product and to communicate to the user in a particular way (Bloch, 1995). In 1996 still less than 10% of the business companies strove towards a market-oriented design concept. One reason for that was found in the missing awareness of the effectiveness of design and the involved mechanisms (Mayer, 1996).

Today, the interest in the effectiveness of design on the customer is growing. Recent studies reveal that manipulations of the design, like shape, colors and texture, can influence the satisfaction and emotions of the user evoked by a website (Kim et al., 2002). Griffith (2005) found, that the layout of a website has an influence on the user's attitude regarding the company behind the website. The usage of pictures on a website is found to change the feeling of trust of the user (Gefen & Straub, 2004; Kim et al., 2002). Hence many researchers become aware of the fact that the online atmosphere, for instance consisting of background images or the layout of the website, influences the choice of the consumer, the preference of a particular product and even the intention to purchase the products on the website (Griffith, 2005; Mandel & Johnson, 2002).

Even though the importance of using the right online atmosphere and design to communicate to the customer and evoke positive responses is accepted in these days, the

specific effectiveness remains unclear. There are many messages than can be communicated by the online atmosphere. Some websites can evoke the perception of being formal or informal, representing fun or severity. Furthermore countless stylistic design properties can be used to communicate a specific meaning and influence the users' response (e.g. Valdez & Mehrabian, 1994; Kim et al., 2002) In order to create an effective and target group oriented website an insight into the specific working of an online atmosphere and its design aspects is necessary.

The present paper presents two constitutive studies. The first study is an attempt to verify the impact on the user by communicating harmony or conflict by the online atmosphere. This study gives insight into the specific effectiveness of using concrete and abstract design cues on the website users' attitude, benevolence and usability. It also addresses the importance to incorporate the interaction effects of design properties within the creative process of developing an online environment. In doing so, the influence of additional constructs like social presence and self-construal is taken into consideration. The second study is a laboratory research, which strives for a clarification of the results found in study I. Therefore new hypotheses and variables are proposed based on the first study.

The Meaning of Harmony versus Conflict

People are social creatures. Virtually every individual strives for companionship and harmony. Next to physiological needs, like food and water, individuals have social needs. Those needs include friendship, affiliation and happiness (Blackwell et.al, 2006). Harmony can be defined as the agreement in interests, feelings or friendly and peaceable relationships. Even with respect to recent advertisements or existing online services this human *need for harmony* becomes apparent. By imagining successful social networks or web pages most of the time a harmonic atmosphere is created (i.e. happy people and colorful background) to communicate the feeling of togetherness, accordance and satisfaction. In advertisements the

perfect family or circle of friends is often represented by a harmonic atmosphere, showing all the members in agreement, smiling and being together happily.

The context of conflict or distance between people is less common within online environments or in advertising. Being in a situation of disharmony or distance with another person mostly results in inner stress and a feeling of unease (Glöckner, 2000). However, the perception of conflict or distance also has positive effects. Conflict stimulates interest or curiosity and may promote independence and goal orientation in specific situations (Markus & Kitayama, 1991; Glöckner, 2000). It may be conceivable that in a formal online context like an information service page a conflict oriented online atmosphere may result in positive users responses. A representation of conflict in an online environment may enhance the seriousness of the topic or goal orientation or professionalism of the company behind. The need for harmony or conflict also differs among different individuals and their values, like the individuals desire to be a part of a group (De Dreu & Van de Vliert, 1997). Individuals that are less group-oriented, or in other words more independent, value conflict oriented situations more than a strong harmonic atmosphere (Markus & Kitayama, 1991).

Notwithstanding, the impact of using a harmonic or conflict oriented atmosphere in the online environment remains unclear. Consider the importance of the online atmosphere on the company's success and user response, insight into the effectiveness of a harmonic or conflict oriented website design seems useful.

Communicating a Symbolic Meaning in the Online Environment

Stylistic design aspects dispose of the possibility to send out a specific message and in turn evoke certain emotions within the users (e.g. Bloch, 1995). In other words, the design of a product or website can attend to symbolize something abstract or implicit, like harmony or conflict, to the user and in turn influences his/her response. For instance, dark colors in comparison to light colors are found to communicate a symbolic meaning of hostility and

therefore are perceived as more aggressive by the participants (Valdez & Mehrabian, 1994). According to Van Rompay et al. (2010), texture-image congruence in online-commerce embodies a clear product image, which in turn influences the customer's attitude. Hence, it is possible to communicate a symbolic meaning by the online atmosphere and in turn influence the users' response. With respect to a harmonic or conflict oriented website it is hypothesized that:

H1: Creating a website that either communicates harmony or conflict has an influence on the user's attitude, benevolence and usability of the website. A website communicating harmony leads to a more beneficial user response than a website communicating conflict.

To communicate a specific symbolic meaning like harmony or conflict in an online environment the importance of design aspects is apparent. Concerning the countless stylistic design alternatives of a website the right usage of specific design aspects communicating harmony or conflict through different ways is beneficial. Whereas some design aspects communicate to the users in a very direct or concrete manner others are more abstract in representing a specific symbolic meaning. In order to create a successful website the combination of a more concrete and abstract design cue of harmony or conflict is valuable. Portraits are known to be a very concrete way to communicate to the user and embody a specific meaning. In contrast the shape of a website is expected to act as a very implicit or abstract tool to communicate harmony or conflict.

Portraits: Communicating the Concrete

Images of people or portraits are often used in branding and advertising and are known as a good and frequently used communicating medium in the online environment. With the

aid of an image it is possible to embody a specific meaning or emotion to the customer or online user in a concrete way.

With respect to Voigt and colleagues (2005) pictures of persons communicate emotional experiences to users because they act as clear key visuals for specific symbols. For instance, a portrait of two business men shaking hands is directly associated with success, business or future by the observer (Voigt et. al, 2005).

Another important reason for the effectiveness of portraits in the online environment is the possibility to give social information or information about the communication partner. Using a website is a way of communication, but there are important factors within the online communication that are mostly reduced (Postmes & Tanis, 2003). The usage of computer mediated communication (CMC) or a website is more anonymous and impersonal than the normal person-to-person communication and must therefore be seen as lacking human warmth (Head et al., 2001). Portraits dispose of the capability to evoke users' expectations about the communication partner or even people behind a website and so reduce the perceptual lack of social information. Furthermore, in an online environmental context, pictures of people raise the perception of someone being there psychologically. According to Short and colleagues (1976), users of CMC media are influenced by the amount of experiencing the communication partner as *psychologically* present. The more *psychological presence* is perceived and assessed by the users the stronger the social effect of the medium becomes. The perception *of someone being present psychological* is important to build up knowledge about the interaction partner, inner states and the assessment of the characteristics of the other person and in turn affects the user's response in a positive way (Short et.al, 1976).

Using portraits on websites is a successful strategy to increase the user's trust, companies' credibility or to create positive attitudes in the users (e.g. Kroeber-Riel, 1996). For instance, Steinbrück and colleagues (2002) found out that portraits of employees increase

the trustworthiness of an e-bank website and the company behind that site. In contrast, using no pictures on an e-bank website resulted in less perceived trustworthiness.

Even though a picture is perceived as a whole, diverse stylistic properties are existent to create a portrait that embodies harmony or conflict. For instance a portrait may change in total numbers of persons, distance between the individuals, the camera angle and perspective or even facial expressions. Users' reactions show to change with respect to stylistic properties that are used. For instance, Fogg and colleagues (2001) found website user to trust an article more when the author was represented on a photo in a formal than in a casual way. Therefore, using the right stylistic properties, like distance, number of persons or dress style, on a portrait is expected to work as a concrete cue of harmony or conflict.

Shape: Communicating the Abstract

Nearly 100 years ago, artists like Wassily Kandinsky and Paul Klee were engaged in the question how shapes can affect people's minds. According to Kandinsky, every shape and form has its own characterization and is able to express certain feelings and emotions to people. Shapes like circles or rectangles therefore could embody perceptions like endlessness, sharpness, introversion or extroversion by itself (Lankheit, 2002). Of course the ideas of Kandinsky and Klee are just one example of how shapes can influence people's perception and minds. According to many theorists the reaction of individuals to a certain shape or object are based on its *dynamization* or "*motion*". In other words feelings and emotions about shapes or objects are often based on the motion of existing lines. Consider a circle the lines are repetitive and rounded down. Because of this *motion* or *dynamization* a round shape is often defined and perceived as endless and warm, whereas an angular shape with its lines suddenly changing direction is referred to as thrilling or shocking (e.g. Van Rompay, 2010).

Another approach centres on the empathy of individuals with respect to dynamization. Individuals tend to imitate specific *motions* of other people but also of objects. In doing so

people perceive or empathise the emotions or in case of an object the expression of a symbolic meaning (e.g. Lipps, 1897).

Several shapes are able to express different associations within people's minds. Whereas round symbols like circles evoke associations of kindness, harmony and approachableness, angular shapes were mostly associated with characteristics like energy, toughness or strength (Berlyn, 1960, 1976). This fact is further emphasized by a research of Bar and Neta in 2006. In this exploration, multiple daily objects like watches and couches were manipulated as either round or as angular. Neutral objects manipulated as angular were perceived as much more aggressive than round manipulations. In contrast, round objects were perceived as warm (Bar & Neta, 2006). With respect to Bar and Neta, the type of contour in turn has an influence on the perception and attitude forming about an object. Zhang and colleagues (2006) found round shapes to symbolize harmony, whereas an angular design was perceived as communicating conflict. Furthermore they underline the impact of individual differences in the aesthetic perception of shapes.

Concrete versus Abstract – Effects on User Response

Even though interplay of both design properties on the users response is assumed and considered, the usage of concrete and abstract design aspects to communicate harmony or conflict to the website user is expected to result in different individual effect sizes. Portraits are shown to be a concrete tool to communicate to the user and are especially important in context of trust, or benevolence, and building up a positive attitude. The shape affects the user in a more abstract way but is shown to influence the attitude and usability of the website. Based on this idea and the literature just mentioned, the following hypotheses are proposed:

H 2: A harmonic portrait results in a more positive user response than a conflict oriented portrait. This effect is strongest for the users' attitude and perception of benevolence.

H 3: A round shape results in a more positive user response than an angular shape.

This effect is strongest for the users' attitude and website usability.

H 4: Portraits are the strongest predictor of the users' attitude, benevolence and usability.

The shape acts in a more abstract way and therefore results in a less pronounced effect on the users' response.

Additional Predictors of Users Response

As indicated before the influence of harmonic or conflict oriented design properties on the website user's response may change due to additional variables. Portraits are shown to give social information to the website users by raising the perception of someone being present psychologically. Furthermore, a round shape is perceived as warm and more harmonic than an angular one. A related construct that should be mentioned at this time is the perception of social presence, or in other words, the perceived warmth and humanity of the website that is known to increase the attitude and perception of trust in an online environment. Additionally the individual difference of being more harmony or conflict oriented, or in other words the self-construal orientation, should be considered in the present context.

The Mediating Role of Social Presence

Social presence must be defined as the extent to which a medium gives the user the perception of *someone being present* (Short et.al, 1976). Another definition, consistent with and adopted by this study, stresses the psychological aspect of social presence. With respect to this definition, social presence is related to the *warmth* of a medium. If a medium, like a website, includes feelings of sociability, sensitivity or human contact, it will be perceived as warm and harmonic, or in other words it is high on social presence (Gefen & Straub, 2003). With respect to Baylor (2009), the visual presence shown on a picture is able to address ones

perception of *someone being there socially* and thereby creating a feeling of social presence. In addition, Gefen and Straub found out that harmonic pictures shown on a website are able to evoke feelings of personal, sensitive and sociable human contact, which in turn increases the perception of social presence in the website users (Gefen & Straub, 2004).

Another research done by Hassanein and Head (2004) demonstrated the possibility to integrate a sense of human warmth inside an online environment by using picture design elements and social texture. Furthermore, they were able to allocate the impact of social presence, or the perception of human warmth, on the perceived trust, enjoyment of the websites and feeling of usefulness that in turn leads to a more positive attitude towards a website. Hence communicating harmony with the aid of a portrait and even by the usage of a round shape may increase the perception of human warmth on the website that in turn positively affects the users' response. It is hypothesized that:

H 5: The more harmony is presented on the website, especially with respect to the portrait, the higher the perception of social presence in the user becomes. Higher perception of social presence results in a more positive attitude and benevolence.

The Effect of Self-Construal

The orientation of self-construal is defined as the relationship between other people and oneself, with regard to feeling oneself as separated from or connected to the group (Markus & Kitayama, 1991, p. 226). Individuals with an independent self-construal value autonomy, uniqueness, self-promotion and assertiveness and therefore are more conflict oriented. In contrast, an interdependent self-construal is defined as valuing group harmony, group feelings and being more intertwined with the social context (Markus & Kitayama, 1991). Zhang and his colleagues (2006) explored the impact of self-construal with regard to the aesthetic preference for round and angular shapes in logos. By priming the self construal

of the participants, the aesthetic preference of shapes was tested. Angular shapes, which evoke associations of confrontation, were valued higher and evaluated more positive by the test persons with an independent self-construal than by more interdependent oriented persons. The same relationship was found between round shapes and interdependent self-construal (Zhang et al., 2006). Based on those findings an impact of self-construal on the perception of the website is expected. It is hypothesized that:

Hypothesis 6: A harmonic oriented online atmosphere results in a positive attitude, benevolence and usability especially for individuals high on interdependent self-construal. A conflict oriented online atmosphere results in a positive attitude, benevolence and usability especially for individuals high on interdependent self-construal.

STUDY I

A quantitative research is conducted to verify the influence on the website users by communicating harmony or conflict by the online atmosphere. In order to create a high level of harmony or conflict on the website, two different design aspects are manipulated. This study makes use of the concrete design cue portraits and the more abstract design cue shape. The study aims to define the specific effectiveness of both design cues of harmony or conflict and their interaction effect on the users' attitude, benevolence and usability. In doing so, the influence of additional constructs like social presence and self-construal is taken into consideration. An informational website about study-choices is created to communicate harmony or conflict to the website users, particularly students. The participants observe different versions of websites. The shape is created as round vs. angular, which acts as an abstract symbolic meaning of harmony versus conflict. Manipulations of portraits on the website are conducted to create harmony vs. conflict via different stylistic properties. The

present study concerns a between-subject design, so every participant just had a look on one combination of shape and portrait.

Research Model

To give an overview of the concepts used in this study a research model was developed. All expectations are based on the literature mentioned above and on own ideas.

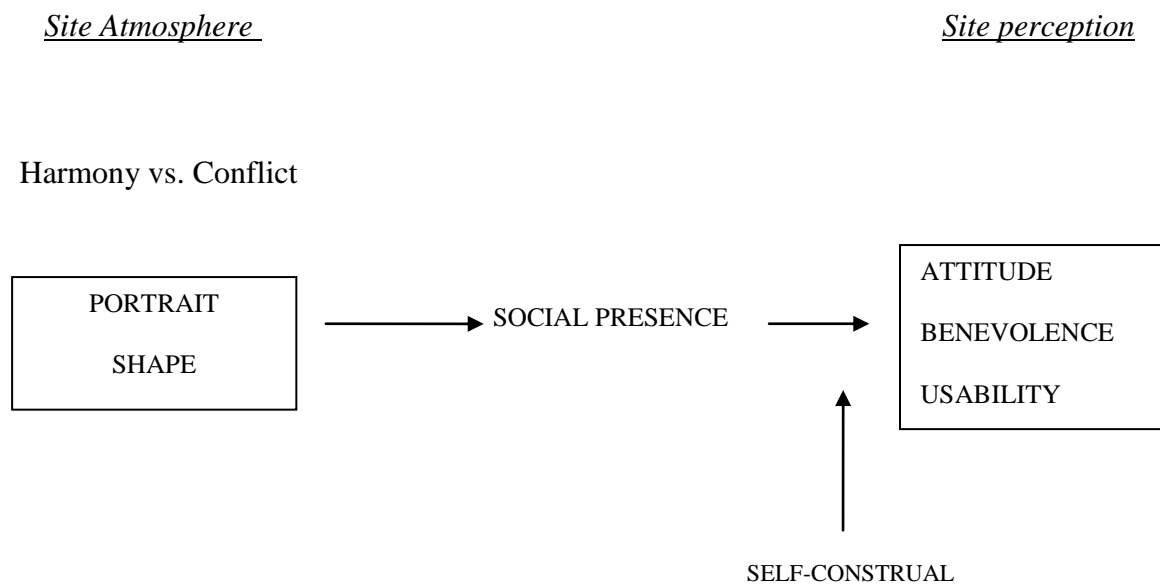


Figure 1. Research model of all constructs used within the first study.

The shape and portrait communicate either harmony or conflict and act as independent variables in this study. The attitude, benevolence and usability act as dependent variables. The impact of the independent variables on the outcome variables is expected to be mediated by the perception of social presence. Furthermore, the impact on the dependent variables is expected to be affected by the individual's self-construal (independent versus interdependent).

Method

Stimulus Material & Pilot Tests

Stimulus Material

Two different stimuli were used in this study. On the one hand a portrait was created to communicate harmony or conflict with the aid of different stylistic properties. On the other hand the shape of the whole website was manipulated either as round or as angular to communicate harmony and conflict.

Portrait Manipulation. The portraits for the website were photographs. To create harmony or conflict within the portraits different stylistic properties were manipulated. To reflect harmony four students were shown standing together as a group. The distance between the students was created small by direct contact and the students look at each other. To further underline harmony, friendship and happiness the students wear casual dresses. To create an adequate symbol of conflict two students were standing back-to-back and distant to each other. Hence the distance between both people was high with no face to face interaction. To further underline conflict those people wear business dress. In total 300 photos were shot to sustain an adequate sample of possible stimulus material.

Shape Manipulation. Two website welcome pages were created by paying attention to the whole shape of the website page. To communicate harmony to the website user a round overall shape was used. An angular shape represented an abstract cue of conflict. The shape was manipulated by using round or angular contours of the border, menu items of the welcome page and the structure of the picture used on the website. Furthermore the background of the website page was created with round vs. angular background patterns. For the design of the welcome page versions, the text, colors (grey, white, light yellow) and letter types were chosen to express neutrality, to reduce the impact of those factors to a minimum. The text used on the information website page gave a short explanation about the topic of studychoices but was written in a neutral way.

Pilot Tests

Method. In total, two pilot studies were conducted among German students. The first pilot study was a pretest of all different portrait versions. Each combination of all stylistic properties (e.g. distance, dress style, total number of people) was tested with at least two different photographs. Those portraits were then pre-tested on 20 manipulation items that tested their operationalisation of harmony and conflict. Altogether, 20 Students took part in the first pretest. The requested items, like *harmonic* or *distant*, were based on own ideas and definitions given for a high or low level of social presence. Subsequently, those portraits, which implied the strongest feelings of harmony and conflict, were chosen for the second pilot study.

To assure the effectiveness of the portraits in combination with the designed shape of the website start pages, the photographs were formatted and placed into the website versions. The contrast and size were modulated equally for all website versions. In total, four different website welcome pages (2* shape (round vs. angular) 2* portrait (harmonic vs. conflict)) were created and pretested on items for harmony vs. conflict between 20 German students.

Results. The round website welcome page in combination with the harmonic portrait (group of students, low distance, face-to-face, casual dress) was rated as very harmonic ($M = 4.1$; $SD = .72$) and low in conflict ($M = 2.4$; $SD = .70$). In comparison, the angular website showing two distant people standing back-to-back and wearing a business dress was rated high on the items for conflict ($M = 3.7$; $SD = .45$) and low with respect to harmony ($M = 2.2$; $SD = .65$). Analysis of variance revealed that those two websites differed from each other significantly with regard to communicating a meaning of conflict ($F(1, 33) = 40.27, p < .01$) and harmony ($F(1, 33) = 28.30, p < .01$).

Participants and Research Design

Totally, 765 German students took part in the study. 529 of those were female, 228 were male. Eight test persons did not state their gender. The average age of the test persons was between 23 and 27 years ($M = 2.3$; $SD = .78$). The age was measured via 4 different age classifications. The research was taken with the aid of an online questionnaire, because this reflects the environment of a website evaluation in a good way. To create the questionnaire the research tool *Thesistools* was used. To recruit the test persons, more than 200 student councils of different departments and the students Union were contacted by mail and asked to forward the link of the research to all students of the department.

Research Design

The research had a 2* shape (round versus. angular) 2* portrait (harmonic versus. conflict) 2* self-construal (independent vs. interdependent) between-participants design. Furthermore, the level of social presence was treated as a mediation variable within the present study. The participants were randomly assigned to one of the four website versions.

Procedure and Description of the Questionnaire

The participants were informed that they would participate in a research for consumer psychology and should evaluate a website with the content: *information about study choices*. Furthermore the test persons learned that the website “Pimp-up-your-Bachelor” would be online after the research is finished. To reduce the number of uncompleted questionnaires, three gift coupons were drawn by all participants. All participants were informed about the run of the questionnaire either at the beginning as well as in between. They also got briefed that they should look at the website welcome page closely because later on they had to answer questions about it. Because of the fact that the questionnaire was fairly long, the website welcome page was shown to the test persons a second time after they completed half of the

questionnaire (just a small illustration of the website to give a mnemonic). With the aid of this, the possibility of forgetting or decrease of the stimulus material was reduced.

Description of the Questionnaire

First, the participants had to give information about their gender, age, nationality and field of study. After that the 24 items of the Self-Construal Scale (SCS) were presented to the test persons (Singelis, 1994) to measure if the participant's self-construal was either independent or interdependent. The twelve items of independent self-construal, measured if the test persons *feel unique, value themselves above the group or feel independent* (Cronbachs alpha: .58). With respect to the alpha value, just 9 out of 12 items of the interdependent self-construal subscale were used in the analysis. Those items measured *if someone would put him/herself back because of the group, value the relationships towards other persons as more important than the own success or the general value of relationships to others in relation to their own person* (Cronbachs alpha: .59). To distract the test persons from thinking about the meaning of the self-construal scale, two items of the covariant "identification with typical students" ($\alpha=.74$) were shown at the test persons before representing the stimulus website.

After presenting the website version, the dependent variables and manipulation checks were measured with the aid of a 5-point Likert rating scale. All existing scales were translated into German by different native speakers.

Based on the work of Deighton, Romer en McQueen (1989), the attitude towards the website was measured with five items (Cronbachs alpha: .86), i.e., *the liking of the website, the feeling whether the website fits to oneself or how pleasurable the website was perceived*.

Based on the scale of Specific Online Consumer Beliefs (Trustworthiness) of Gefen (2000), benevolence, which acts as a dimension of trust was measured by three items e.g. *whether the website was perceived as well meaning or with benevolent intentions and if the website puts the students interest before their own* ($\alpha = .86$). Another factor measured within

this study was the usability, i.e., the future behavior in association with the website. Those 4 items included whether the test persons would *give personal information to the website*, *would recommend the website to other people or would use the new website in daily life* ($\alpha = .89$).

Again, the manipulation check items used in the pilot studies were measured with an alpha value = .73 for conflict (*impersonal and cool*) and $\alpha = .84$ for the harmonic manipulation (*warm, harmonically, caring, group belonging and sensitive*).

Additionally, five items based on the work of Gefen and Straub, were used to measure the level of social presence perceived by the test persons (Cronbachs alpha: .88.). Those questions contained items like the feeling of *human warmth* or *sensibility*, so they can act as manipulations check for harmony vs. conflict as well (see appendix b for the complete questionnaire).

Results

Manipulation Check

The items regarding the extent to which the test persons perceived the website as harmonic or conflict oriented showed a significant effect of the website manipulations.

Analyzing the effect of the portraits also a significant effect of the manipulation items to harmony versus conflict was found ($F(1,369) = 33.44, p < .001$; $F(1,369) = 28.51, p < .001$). The harmonic created portrait was perceived as more harmonically than the conflict oriented portrait ($M=2.86$; $SD=.82$ versus $M=2.36$; $SD=.82$). With respect to communicating conflict, the conflict oriented portrait was rated higher than the harmonic portrait ($M=3.39$; $SD=1.12$ versus $M=2.76$; $SD=1.13$).

With respect to the shape, the effect of perceiving harmony was significant ($F(1,369) = 9.67, p < .005$), as well as the effect on the conflict variable ($F(1,369) = 27.60, p < .001$). A round shape was experienced more harmonic than the angular shape ($M=2.75$; $SD=.81$ versus

$M=2.45$; $SD=.84$.). Instead, the angular shape was perceived as rather communicating conflict than harmony ($M=3.34$; $SD=1.09$ versus $M=2.48$; $SD=1.07$).

To further support the effectiveness of the portraits and shape, the perception of social presence was used as second manipulation check. The effect of the portrait on the perception of social presence was significant ($F(1,378) = 54.83$, $p<.001$). The test persons perceived a higher level of social presence on the harmonic than on the conflict oriented portrait. ($M=3.15$; $SD=.84$ versus $M=2.39$; $SD=.97$).

In addition, the manipulation of the shape was significant on the perception of social presence ($F(1,378) = 7.61$, $p<.05$). The round shape was perceived as higher on social presence, than the angular shape ($M=2.88$; $SD=.90$ versus $M=2.60$; $SD=.95$).

To sum up, the communication of harmony and conflict via shape and portraits on the website has been effective.

Attitude

To answer the question whether the harmonic and conflict oriented manipulations of the shape and the pictures of the website really affect the attitude of the users and whether both manipulations have the same effect, a multiple analysis of variance was conducted.

Multiple analysis of variance. First the harmonic portrait was coded as 1 and the conflict oriented portrait was coded as 2. The shape was also coded (angular coded as 1 and round as 2). Furthermore a median split of the self-construal scale was done, and self-construal then was coded as 1 for independent and 2 for interdependent. The portrait, shape and self-construal were inserted as independent variables, and attitude towards the website were inserted as dependent variable.

The portrait appeared to show a significant main effect on the users attitude, $F(1, 362) = 5.10$, $p<.005$. Pairwise comparisons revealed higher ratings for the attitude towards the website with the harmonic portrait than with the conflict oriented portrait ($M=2.38$; $SD=.82$

versus $M=2.15$; $SD=.81$). The results showed no significant main effect of shape on the attitude, $F(1,362)=1.10$, $p=.23$, *ns.*)

No significant main effect was found for self-construal on the attitude towards the website ($F(1,362)=.78$, $p=.37$, *ns.*).

No significant interaction effect between shape, portrait and self-construal was found on the attitude towards the website ($F(1,362) < 1$, *ns.*). In addition, no three way interaction reached significance ($F(1, 362) = .05$, $p=.82$, *ns.*).

The results confirm that a harmonic website positively affects the users attitude, but that this effect is stronger for using portraits than just communicating the symbolic meaning through the shape of the website (hypothesis 1 & 4). No significant difference was found for people high on independence or interdependence.

Benevolence

To test, whether the portrait, shape and self-construal affect the users feeling of benevolence, or in other words the trust in the company behind the website as meaning well, different analyses were conducted.

Multiple analysis of variance. A MANOVA was conducted with the shape, the portrait and self-construal as independent variable and benevolence as dependent variable. The analysis showed no significant main effect of shape on benevolence, $F(1,362) = .02$, $p=.88$, *ns.* , but a significant main effect of the portrait on the perception of the websites benevolence ($F(1,362) = 8.83$, $p<.005$). For the harmonic portrait the feeling of benevolence was higher than for the conflict oriented one ($M=3.34$; $SD=.87$ versus $M=3.06$; $SD=.92$) (hypothesis 1 & 4). Again, no significant main effect was found for self-construal on benevolence ($F(1,362) = 1.38$, $p=.24$, *ns.*)

Additionally, one significant two-way interaction was found between shape and portrait on the perception of benevolence ($F(1,362) = 5.01$, $p<.05$). Contrast analysis revealed

a marginal significant difference between the round and angular shape only for the harmonic portrait ($F(1,362) = 3.10, p = .07$), but no significance for the portrait communicating conflict ($F(1,362) = 2.02, p = .16, ns$). For the harmonic portrait an angular overall shape causes a higher feeling of benevolence than when the shape was created round ($M = 3.45; SD = .88$ versus $M = 3.23; SD = .86$). Again, the impact of the concrete cue of harmony versus conflict is stronger than the impact of the abstract cue shape also for the feeling of benevolence. The interaction effect of shape and portrait is more complicated. The usage of angular shapes (communicating conflict) arouses a higher feeling of benevolence than the round shape, but only when the portrait represents harmony.

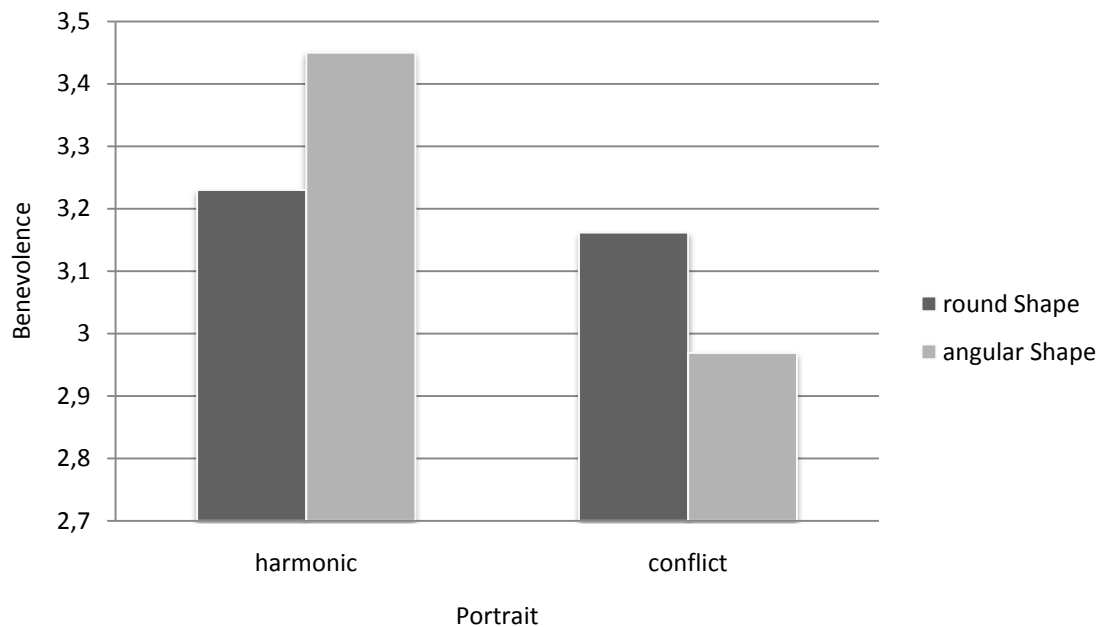


Figure 2: Effects of shape and portrait on the users perception of the websites benevolence. The difference of round and angular shape is significant for the harmonic portrait only.

No interaction effect between self-construal and the shape, or portrait turned out to be significant ($F(1, 362) < 1, ns$). Moreover no three-way interaction reached significance ($F(1, 362) = .47, p = .49, ns$).

Usability

To test whether the website design (shape and portrait) and self-construal also impact the websites usability, or in other words the intention to really use the website in the future, different MANOVAS were done.

Multiple analysis of variance. Again, the shape, portrait and self-construal were inserted as independent variable, whereas the usability acted as dependent one. With respect to the portrait a significant effect on the usability was found.

($F(1,362) = 4.54, p < .05$). The more the portrait is communicating harmony instead of conflict, the higher the user's intention to use the website in the future becomes ($M = 2.10$; $SD = .87$ versus $M = 1.90$; $SD = .84$). A significant main effect of shape on the usability of the website was found ($F(1,362) = 6.30, p < .05$). The usability intention of the website was higher when the website was created with angular than with a round shape ($M = 2.11$; $SD = .87$ versus $M = 1.88$; $SD = .88$).

Again, no significant effect for self-construal was found ($F(1,362) = .32, p = .57, ns$).

No significant interaction effect of shape, portrait and/or self-construal on the usability was found ($F(1, 362) < 1, ns$). The three-way-interaction also did not reach significance ($F(1, 362) = .40, p = .52, ns$).

Hence, with respect to the usability of the website, hypothesis 4 cannot be supported. The manipulation of the shape, either as round or as angular, influences the usability of the website, as strong as the picture manipulation did. Furthermore the findings show that an angular shape is beneficial to a round shape with respect to usability. Hence hypothesis 3 is not supported.

The Mediating Effect of Social Presence

To test whether the effect of the portrait on the attitude, benevolence and usability is mediated by the perception of social presence, a series of different regression analysis were

done. Those were based on the procedure by Baron and Kenny (1986) (The conceptual model of the analysis is found in figure 3). Specifically, it was hypothesized that increasing the perception of social presence results in a more favorable attitude towards the website and a higher perception of benevolence. First of all, the portrait was inserted as independent variable and the attitude, benevolence and usability as dependent ones. The effect of the portrait significantly affect the attitude, $\beta = .14$; $t = 2.82$, $p < .05$, benevolence, $\beta = .16$; $t = 3.17$, $p < .05$, and usability, $\beta = .09$; $t = 1.90$, $p = .05$. The second set of analysis included social presence as an independent variable and the portrait as a dependent variable. Social presence was centered to the mean, with a lower value defined as low social presence and the other way round. The $\beta = .73$ of the portrait on the perception of social presence turned out to be significant ($t = 7.90$, $p < .001$). This result confirms that when harmony is communicated through the portrait on the website the level of social presence increases. Next, the direct relationship between social presence and the attitude, $\beta = .59$; $t = 19.59$, $p < .001$, benevolence, $\beta = .49$; $t = 15.08$, $p < .001$, and usability, $\beta = .51$; $t = 15.60$, $p < .001$, turned out to be strongly significant. In the last step, social presence and the portrait were added as independent variables and tested on the attitude, benevolence and usability. According to Baron and Kenny (1986), the effect of the portrait on the dependent variables should disappear or at least decrease when the mediating variable is added to the analysis.

With respect to the attitude, the effect of the portrait remains significant when social presence was added to the regression model, $\beta = -.12$; $t = -2.84$, $p < .05$, but not as strong as the effect of social presence is ($\beta = .68$; $t = 16.02$, $p < .001$). Hence the effect of the portrait on the attitude is partially mediated by social presence. The Sobel test confirmed this assumption ($z = 7.47$; $p < .001$) (hypothesis 5)

Controlling the significant main effect of the portrait on benevolence for social presence, the impact of the portrait becomes insignificant ($\beta = -.03$; $t = -.46$, $p = .64$. ns.). The

effect is fully mediated by social presence ($\beta = .47$; $t=9.54$, $p<.001$). Again, a Sobel test supported those findings ($z=6.18$, $p>.001$) (hypothesis 5).

As it can be seen in table 1, the effect of the portrait on the usability of the website was not mediated by social presence. By controlling the effect of the portrait on the usability by social presence, the direct effect becomes more significant ($\beta = -.10$; $t=-2.04$, $p<.05$) and social presence seems to be the stronger predictor ($\beta = .52$; $t=10.68$, $p<.001$).

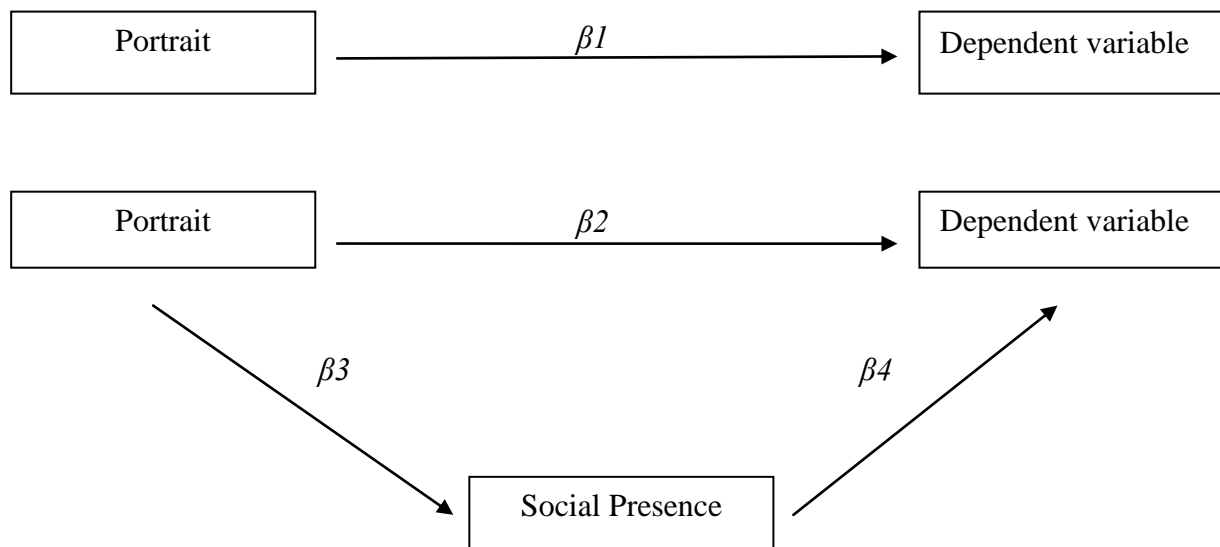


Figure 3. Conceptual model of the mediating role of social presence. As dependent variables the attitude, benevolence and usability were inserted in the analysis.

Table 1. Overview of the β -values of the mediation analysis of social presence.

Dependent variable	$\beta 1$	$\beta 2$	$\beta 3$	$\beta 4$
Attitude	.14**	-.12**		.59***
Benevolence	.16**	-.03		.49***
Usability	.09*	-.10**		.51***
			.73***	

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

Discussion Study I

The present study reveals the strong impact of a harmonic and conflict oriented online atmosphere on the user's attitude, benevolence and usability. The usage of portraits turned out to be a stronger predictor for the users attitude and benevolence than the usage of shape. This was not found for the effectiveness on the usability of the website, hence hypothesis 4 is only partially supported.

With respect to the attitude towards the website, it becomes obvious that the portrait was the strongest predictor. The findings report that a harmonic portrait on the website is beneficial to the users' attitude. In addition this effect is partially mediated by social presence.

Taking the perception of benevolence into consideration the results were almost equal to the effects found on the attitude towards the website. Again, the usage of portraits turned out to be a strong predictor of benevolence, or in other words the perception of the website and its publisher as complaisant. A harmonic portrait increases the users feeling that the website and its publisher acts in a good faith. Again this effect is mediated by social presence.

However, the interaction effect between the shape and picture manipulation increases the perception of benevolence in the strongest way. The findings report that, when confronted with a harmonic portrait on the website, an angular shape result in a higher feeling of website publisher's benevolence than a round shape. Hence the combination of a harmonic oriented portrait and a conflict oriented shape is beneficial to an enhancement of benevolence. The expectation that an overall harmonic online atmosphere is generally beneficial to the website users' response is not supported by this study.

This research further demonstrates the influence of design aspects on the usability of the website. The findings clearly underline the assumption that the shape and picture manipulations are working in a different manner. Even though no interaction effect of both design properties was found, each design influences the websites usability independent from one another. Whereas an angular shape increases the usability intention, a harmonic portrait

also affects the usability intention in a positive way. With respect to the portrait the effect on usability was not mediated by social presence. Without a confrontation of a concrete visual cue, the test persons seem to consider other aspects to decide whether to use the website in the future. At this point, the pure graphical design of the website, in this case manipulated by the overall shape, seems to be able to act as decision guidance for the website users. No results were found with respect to the individuals' self-construal in the first study. With respect to the low alpha value of the self-construal scale it seems possible that the differences between being more independent or interdependent oriented was not singled out adequately by the measuring instrument used within the first study. Furthermore, it can be assumed that the missing effect emerged from actual small differences between the self-construal orientations of the test persons.

Implications for Study II

Consider the positive impact of an angular shape on the usability of the website and the perception of benevolence it is assumed that the shape of a website is able to communicate additionally aspects than just conflict or distance. Thinking about an angular and round shape, a round shape appears creative, coltish and without a clear orientation, whereas an angular shape appears clear defined, symmetrical, structured and even more targeted. Hence, it is supposed that an angular overall forming communicate symbols like goal orientation or professionalism on a website, in contrast to a round-shaped design. Aronoff, Woike, and Hyman (1992) argue that "the effect of physical features on attractiveness perceptions depends on the qualities that are sought". Bearing in mind that the content of the website is informational about study choices, which is mostly taken serious and can have an enormous impact on the student's future, a need of professionalism and/or goal orientation seems understandable. It can be assumed that, particularly with respect to usability, the perception of a websites professionalism or goal orientation result in a beneficial user response.

Because of the fact that the shape was not analysed with respect to professionalism and goal orientation in study I, these potential factors are looked at study II. Furthermore, no effects of the self-construal orientations on the website evaluation or response reached significance in the present study. While self-construal was used as individual differences in the first research, the following study manipulates the self-construal orientation of the test persons directly by priming, to encourage the effect size of self-construal.

STUDY II

A second research was conducted to find out whether an angular shape really communicates professionalism and goal orientation in addition to conflict. If this is the case, this study raises the question whether the perception of professionalism and goal orientation mediates the effect of the shape on the websites usability.

Furthermore, the orientation of self-construal is going to be activated, or in other words manipulated, in the second study. With the aid of this, it is expected to increase the effect size of self-construal. Study II raises the question whether the effect of the two website manipulations (shape & portrait) on website evaluation is influenced by the level of self-construal. Based on the results found in study I, the following hypotheses are proposed:

H 5: An angular shape, as opposed to a round shape, communicates professionalism and goal orientation to the website user.

H6: The effect of the shape on the usability is mediated by the perception of professionalism and goal orientation.

H7: Priming self-construal as either independent or interdependent moderates the effect of the shape and portrait on the users' response.

Method

Self-Construal Priming

To experimentally manipulate the orientation of self-construal, *the warrior story* of Ybarra and Trafimow (1989) was adapted and translated into Dutch. With the aid of this story, the focus was either centred on the individual success of the main character, or on the collective success of the family. On the one hand the way of thinking was therefore point at the individual's self, its success and its own needs. On the other hand the way of thinking was focused on the success of the community, solidarity of the family and the collectivistic needs.

The test persons were told that they read an introduction of a video game, with the game character named Sostoras. The respondents were asked to role-play and put oneself in Sostoras position, by reading the following story:

I, Sostoras, a warrior in ancient Sumer, was largely responsible for the success of Sargon in conquering all of Mesopotamia. As a result, I was rewarded with a small kingdom to rule. About 10 years later, Sargon was conscripting warriors for a new war. I was obligated to send a detachment of soldiers to aid Sargon. I had to decide who to put in command of the detachment. After thinking about it for a long time, I eventually decided on Tiglath who was a member of my family.

To prime the independent self-construal of the test persons, the story was continuative told as follows:

This appointment had several advantages to me. I was able to make an excellent general indebted to me. This would solidify my hold on my own dominion. In addition, the very fact of having a general such as Tiglath as my personal representative would greatly increase my

Prestige. Finally, sending my best general would be likely to make Sargon grateful. Consequently, there was the possibility of getting rewarded by Sargon.

To prime the interdependent self-construal of the respondents, the test persons were confronted with the following:

This appointment had several advantages. I was able to show my loyalty to my family. I was also able to cement their loyalty to me and have a stronger sense of “we.” In addition, having Tiglath as the commander increased the power and prestige of my family. Finally, if Tiglath performed well, Sargon would be indebted to my family. In this way, our family as a group will share the benefits together.

Participants & Design

Totally, 167 Dutch students take part of the study. 78 of those were female, 89 were male. The mean age of the test persons was 23 years ($M=22.97$; $SD=2.86$). To reach the test persons, every participant was personally asked to participate at the recent study.

To control for environmental sources of irritations a laboratory examination were done. A calm room in the University of Twente was used to do the questioning. Using one personal computer, only one respondent at each time becomes part of the research. To keep the online environment of study I, the questions, the self-construal priming and the website again was presented via the online questionnaire program Thesistools.

Research Design

The research had a 2* shape (round vs. angular) 2* portrait (harmony vs. conflict) 2* self-construal prime (independent vs. interdependent) between-participants design. The participants were assigned to one of the website versions and priming conditions by random.

Procedure & Description of the Questionnaire

The participants got informed that they take part in two independent studies with the common subject: *online environment of students*. They were told that online environments like online games or websites are particularly used by young people like students and that they therefore should evaluate two different online environments. The participants were instructed to identify themselves with the main character of an online game and reading the story attentively because later on questions about the story would have to be answered. Then the test persons were confronted with either the independent or interdependent prime. After answering two questions about the story, the test persons were presented with the *second study*. To enhance the feeling of public consumption, which emerged to be the best condition for successful priming of self-construal (Zhang et al, 2006), the participants were told that they had to evaluate the “Pimp-up-your-Bachelor website, which is going to be online in the future. Furthermore they were told that their evaluation influences the real implementation of the website and therefore also has an impact on many other students. After the presentation of one of the four website versions, the participants had to evaluate the website.

Description of the Questionnaire

Upon presented with the self-construal prime, two open ended questions were asked about the story. Those questions correspond to the final goal of the main character and therefore were used as manipulation check of the independent and interdependent prime. After presenting the website version, the dependent variables and manipulation checks were measured with the aid of a 5-point Likert rating scale. All existing scales were translated into Dutch by different native speakers.

To get an insight whether the website manipulations, and particularly the shape, is communicating additional meanings than just harmony or conflict, two new variables were

added to study 2. Based on factor analysis and with regard to the content, the variables goal-orientation and professionalism arise out of the items.

Goal orientation. Because of the fact, that an angular shape was assumed to be perceived as more goal oriented than a round shape, the construct of goal orientation was admit to the second research. In total, goal orientation was measured with the aid of three new items, namely *goal oriented*, *directed* and *targeted*. The construct of goal orientation show a good alpha value of .74.

Professionalism. To find out whether the website manipulations further communicate a meaning of professionalism in addition to conflict or harmony, two items were used to measure the construct of professionalism. Those items were *professionalism* and *competence* and reached a Cronbachs alpha of .74.

Furthermore, again the perception of benevolence ($\alpha = .79$) and the usability ($\alpha = .80$) were measured with the aid of the items used in the first study (see appendix c for the whole questionnaire of study II).

Results

Goal Orientation

To test whether the design aspects on the website, and particularly the angular shape, is communicating goal orientation to the website user a multiple analysis of variance was conducted.

Multiple analysis of variance. First, the round shape was coded as 1, and the angular shape as 2. The portrait was added to the analysis with coding the harmonic portrait as 1 and the conflict oriented one as 2. Additionally, the priming conditions were coded as 1 for the independent prime and 2 for the interdependent prime. The shape of the website, the picture manipulation and priming conditions were inserted as independent variables, and goal orientation on the website as dependent variable.

The results show a strong significant main effect of the shape of the website on the perception of goal orientation, $F(1, 167) = 7.64, p < .005$. When the website was created angular in contrast to round the perception of goal orientation on the website increased ($M=3.73; SD=.56$ versus $M=3.44; SD=.78$). The findings support that an angular shape is able to communicate goal-orientation to the website user (Hypothesis 5).

No significant main effect was found for the portrait and the self-construal priming on the feeling of goal orientation ($F(1, 167) < 1, ns.$; $F(1, 167) < 1, ns.$).

No significant (three-way) interaction of the shape, the portrait and the self-construal priming was found on the perception of goal orientation either ($F(1, 167) < 1, ns.$).

Professionalism

Multiple analysis of variance. To get an insight whether the design influence the perception of the websites professionalism, again a multiple analyses of variance was conducted using the shape and portrait as well as the self-construal priming as dependent variable and professionalism as the independent one.

No main effect was found for the shape of the website ($F(1,167) = .37, ns.$), the portrait ($F(1,167) = .13, ns.$) and the self-construal priming ($F(1,167) = .04, ns.$).

A significant interaction effect of the shape and portrait on the perception of professionalism was found ($F(1,167) = 3.74, p = .05$). Contrast analyses reveal a marginal significant difference between an angular and round shape for the harmonic portrait only, $F(1,163) = 3.29, p = .07$, but not for the conflict oriented portrait ($F(1,163) = 1.11, p = .29, ns.$). When confronted with a harmonic portrait, an angular overall shape increases the perception of professionalism in a stronger way than a round shape does ($M=2.74; SD=1.01$ versus $M=2.35; SD=1.08$). Against the expectation made in hypothesis 5, an angular shape by itself did not significantly communicate professionalism to the website users in the present

research. Nevertheless, the interaction effect clarifies an impact of both design cues on the perception of professionalism.

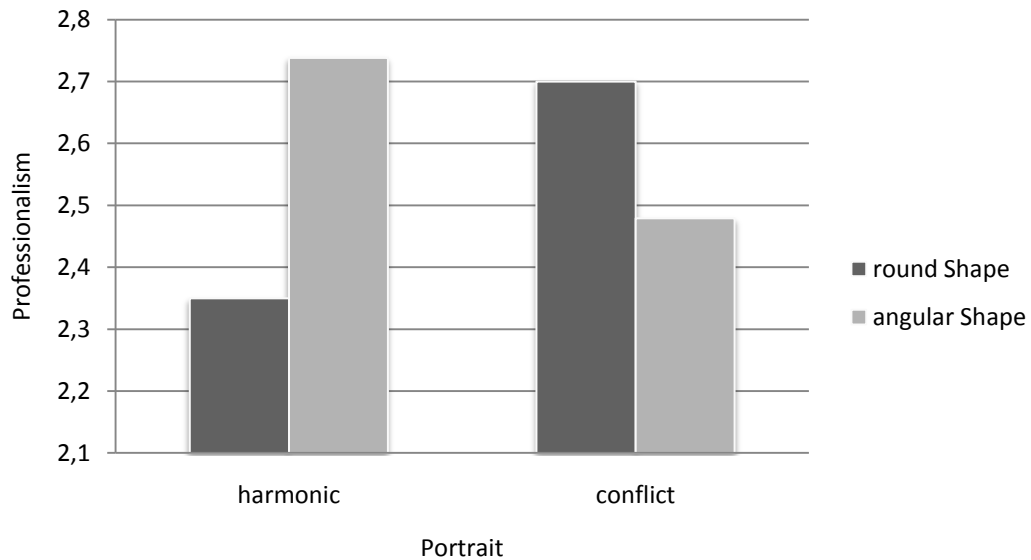


Figure 4: Effects of shape and portrait on the user's perception of the website's professionalism. The difference of round and angular shape is significant for the harmonic portrait only.

No significant interaction effect was found between the self-construal priming and the shape on professionalism, $F(1,167) = 2.08, p = .15, ns.$, and between the priming and portrait ($F(1,167) = .002, p = .96, ns.$).

Furthermore, no significant three-way-interaction was found for the self-construal priming, the shape and portrait on the perception of professionalism neither ($F(1,167) = .14, p = .70, ns.$).

Benevolence

To get an insight into the impact of the website design and the activation of self-construal on the feeling of benevolence, a multiple analysis of variance was conducted.

Multiple analysis of variance. As independent variables, the self-construal priming and

both website design properties were added to the analysis. The feeling of benevolence acted as a dependent variable.

No significant effect of the shape, $F(1,167) = .20, p = .65, ns.$, the portrait, $F(1,167) = .11, p = .73, ns.$, and the self-construal activation, $F(1,167) = .70, p = .40, ns.$, was found on the perception of benevolence on the website.

An interaction effect of the shape on the website and the portrait on benevolence reached significance ($F(1,167) = 6.76, p < .05.$). Additional contrast analysis reveal a significant difference between the round and angular shape for the conflict oriented portrait only, $F(1,167) = 4.81, p < .05$, but not for the harmonic portrait ($F(1,167) = 2.23, p = .14, ns.$). When confronted with a conflict oriented portrait, a round overall shaping increase the perception of the websites benevolence in a stronger way than an angular shape does ($M = 4.00; SD = .58$ versus $M = 3.65; SD = .70$).

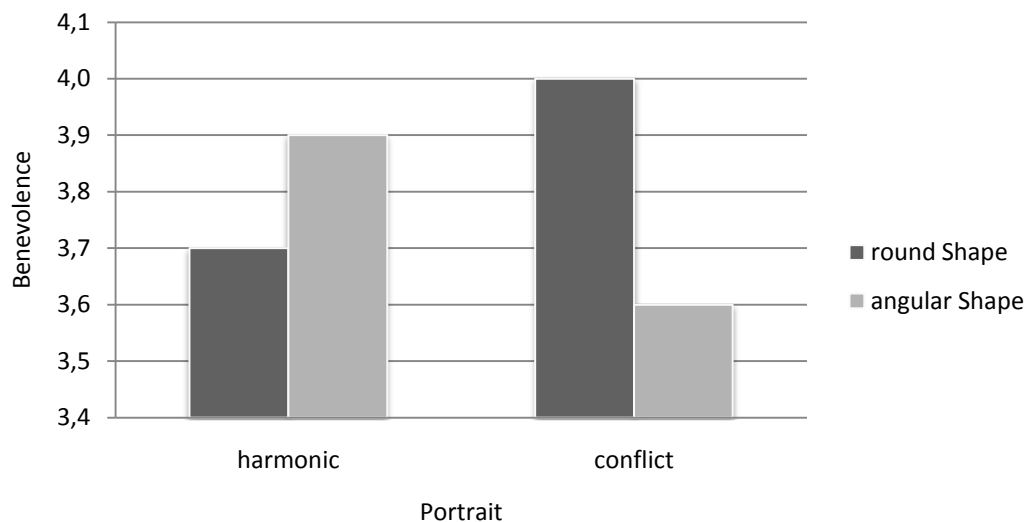


Figure 5: Effects of shape and portrait on the users perception of the websites benevolence. The difference of round and angular shape is significant for the conflict portrait only.

Furthermore, an interaction effect of the self-construal priming and the portrait on the feeling of benevolence was found ($F(1,167) = 4.12, p < .05$) (hypothesis 7). Contrast analysis show a significant difference between the two priming conditions only for the harmonic

portrait ($F(1, 167) = 3.97, p < .05$) but not for the conflict oriented one ($F(1, 167) = .73, p = .39, ns.$). When confronted with a harmonic portrait on the website, independently primed test persons perceived a higher level of benevolence than interdependently primed test persons ($M = 3.95; SD = .64$ versus $M = 3.62; SD = 1.02.$). This result is oppositional to the assumptions made before. Against the expectation, a harmonic portrait increases the perception of benevolence of the website especially for test persons high on independent self-construal.

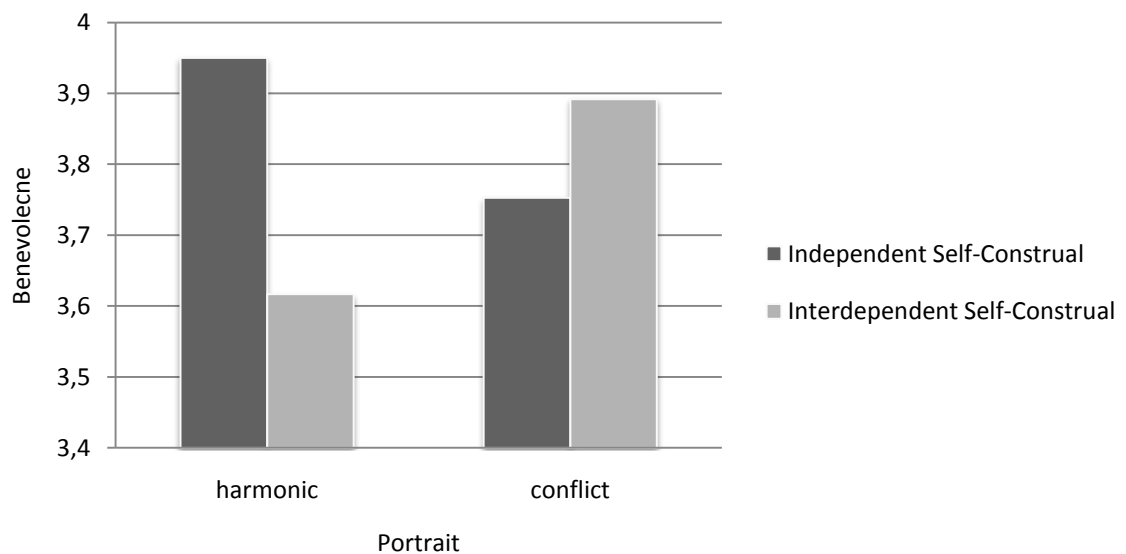


Figure 6: Effect of portrait and self-construal priming on the perception of benevolence.

The difference between the two priming conditions is significant for the harmonic portrait only.

No effect was found for the shape of the website and the activation of self-construal on the feeling of benevolence ($F(1, 167) = .65, p = .62, ns.$). In addition no three-way interaction turned out to be significant ($F(1, 167) = 1.53, p = .22, ns.$).

Usability

As already done in the first study, the impact of the website design and self-construal priming on the usability of the website was tested.

Multiple analysis of variance. Again, a multiple analyses of variance was done, by adding usability as dependent variable, and the portrait, shape and self-construal priming as

dependent ones. A marginal significant main effect was found for the portrait on usability ($F(1,167) = 3.12, p=.07$). The intention to use the website in the future, to recommend the website to other students or give information on the website was higher when the portrait communicates harmony as opposed to conflict ($M=2.78; SD=.82$ versus $M=2.56; SD=.77$.)

No main effect was found for the shape, $F(1,167) = .34, p=.55, ns.$, or the self-construal priming on the usability ($F(1,167) = .23, p=.62, ns.$). Furthermore, no two- or three-way interaction was found on the intention to use the website in the future ($F(1,167) < 1, ns.$).

Discussion Study II

The findings of study 2 are to an appropriate extent in line with the assumptions made before. The results give evidence that the shape of a website is able to communicate goal orientation. Even though the effect of the shape on the perception of professionalism did not reach significance, the impact of the shape on goal orientation and professionalism was still higher than for the portrait. As expected, the evaluation of goal orientation was strongest when the test persons were confronted with an angular website in contrast to a round overall shape. Hence, making use of an angular overall shape within the online environment enhances the user's perception of the website being goal oriented, directed and targeted.

An interaction effect between the shape and portrait on the feeling of professionalism reached significance. The findings illustrate that professionalism is mainly communicated by the use of a harmonic portrait in combination with an angular overall website shape (see figure 4 for context). This evokes the assumption that the participants need a combination of harmony, communicated by the portrait, and an indication for goal orientation and conflict (communicated by an angular shape) to get the impression that a website is professional.

Against the assumption made before, the mediation of goal orientation or professionalism and shape of the website on the usability does not reach significance. Even

though a main effect of the shape on the usability intention was found within study 1, this does not resurface within the second research. Nevertheless, the idea of communicating goal orientation by creating an angular overall website shape is supported by the present study.

Furthermore, the findings of the second study were able to clarify the course of effectiveness in terms of the website design on the perception of benevolence (see figure 5 for context). Again, the feeling of the website and its publisher's benevolence was strongest, when the website included a combination of harmonic and conflict oriented design. Interesting to note at this point is that the findings of study 2 reached significance only for the conflict oriented portrait. Hence, the combination of a conflict oriented portrait and a round shape increased the perception of benevolence the most.

Taking the effectiveness of self-construal into consideration, the present study was not able to stress the importance of self-construal to an online environments evaluation in the extent that was expected before. However, in contrast to the first research, activating self-construal by priming had an impact on the perception of benevolence. The study indicates that people with high levels independent self-construal perceived the website publisher acts in a good faith especially when confronted with a harmonic portrait (see figure 6 for context). The findings show that the independent and interdependent priming results in an oppositional evaluation of benevolence. Whereas the independent primed test persons perceive the highest level of benevolence for the harmonic portrait, interdependent test persons perceive the conflict oriented portrait as most benevolent. This result is in direct opposition to what was expected before.

GENERAL DISCUSSION

As companies and website designers contemplate several website design alternatives, it is essential to understand more about the actual effectiveness, characteristics and symbolic meanings of using different design cues. Furthermore, the need to incorporate even personal differences of the online products target group within the creative process of a website seems indispensable with respect to the contemporary online market competition.

The present research makes significant contribution to the potential of communicating symbolic meanings by concrete visual cues, but even through abstract cues like a manipulation of the websites overall shape. Up to now, only marginal researches explore the distinct effectiveness of using concrete and more abstract design properties within the online environment. The present findings stress the importance to understand the different working of both designs, especially with respect to an enhancement of the websites usability. In addition, the current research gives an insight into the interplay of both website design aspects primarily in terms of building up the users feeling of benevolence and the perception of professionalism in an online environment.

The first issue worth mentioning is that concrete design properties, like portraits, as well as less obvious design cues of a website can serve as a symbol for harmony or conflict, which in turn influences the online user's evaluation, response and usability. The fact that the shape of a website is able to communicate a symbolic meaning of kindness and harmony as well as conflict and distance is in line with other researches (e.g. Berlyn, 1960; Zhang, 2006). However, the present findings represent a step further to the possibility of communicating a specific meaning by the shape. Additionally, an angular shape seems able to communicate goal-orientation within an online environment. Using a simple design cue, like an angular overall shape on a website, increased the user's perception of the website as being goal-oriented, directed and targeted. It is beyond question that the perception of a website as goal-oriented or purposive is of importance to many companies with online presence. According

to Huang (2003), there are two purposes to use the web. On the one hand, individuals surf for their entertainment, but on the other hand they search for specific information. Based on the latter case, specific information search follows from goal oriented need (Hoffmann & Novak, 1996). Mainly with respect to informational or service website contents the findings therefore have practical implications, because it offers the possibility to underline the goal orientation of an online environment by using the right shape only.

The fact that there are reams of design factors existent, including colors, shapes, sizes or graphics, that all can be arranged in different ways, stresses the importance of getting more insight into the particularly effectiveness of specific design properties. Using different design cues on a website does not imply that all design aspects are working similarly. Even though the portraits and shapes embody the same symbolic meaning of harmony or conflict, both design aspects influence the user's attitude, benevolence and especially the usability of the website differently.

To promote the user's attitude and the perception of the website and its publisher as benevolent, the usage of a harmonic portrait turned out to be effective. This finding is in accordance with many theories that engage in the effectiveness of social effects in the online environment. Several researchers argue for the creation of social effects or an enhancement of social presence perception in computer mediated media via portraits to enhance the user's evaluation and trust (e.g. Hassanein & Head, 2004). Nevertheless many contradictory results were found especially with respect to the effectiveness of using portraits for the development of online users trust (Corritore, Wiedenbeck & Kracher, 2003). In the present study the perception of benevolence was used as a representation of trust. The findings confirm that the impact of a harmonic portrait on the development of benevolence, as well as the attitude towards the website, runs via social presence. For practical implication, particularly with respect to an enhancement of benevolence, it seems interesting to note the product or service category that was used in this research. Representing an informational website, which aims to

inform students about the right study choice, can be described as a kind of experience product (service) or even credence category. According to many theorists, the real quality of an experience product (service) can only be ascertained after the purchase, or in this case decision, and with respect to the credence category it cannot even be evaluated after the purchase or final decision (e.g. Hassanein & Head, 2004). Understandably, the level of uncertainty by the users of a more experienced or credence categorical online service is high. The possibility of increasing the feeling of benevolence towards a website or its publisher, and maybe reducing a sense of uncertainty is important to many companies. Thus, making use of a harmonic portrait and by this way increasing the perception of social presence seems worthwhile to the success of a (informational) website.

Another factor that is important to website publishers and companies is the usability of the website. In this case the usability was defined as the willingness to use the website in the future, recommend the page to other people or give personal information on the site. Consider the importance of the actual usage of a website by the target group and the contemporary influence of word- of –mouth (WOM) communication on the increased attention and status of an online product, (Blackwell et.al, 2006), the concern to increase the usability of a website is obvious. The present research provides evidence of the possibility in increasing usability either with the aid of using harmonic portraits on a website, or creating the whole website with an angular shape. Nevertheless, the usage of an angular overall websites shape has the strongest effect on the usability. When confronted with a low cue environment, usability seems to be affected by the overall shape, or physical structure, of a website in the first line. According to Bernard (2003), “humans on a preconscious level seek structure in the things they see (*on a website*)”. Taking the perception of round and angular shapes into consideration, an angular overall shape seems much more structured than a round shape. As mentioned earlier, an angular shape was also noticed as much more goal-oriented and targeted. Even with respect to an informational website, the need of structure and goal

orientation seems understandable to the decision-making of whether or not using a website in future. Even though expected before, the present study did not detect the mediating role of designing the shape and goal orientation on the user's usability. Hence, the results stress the importance of further research on the effectiveness of communicating goal-orientation by the design on the actual usability of the website.

Without a possibility to manipulate the overall shape of a website, making use of harmonic portraits also turned out to be a predictor of the websites usability. Against the expectations made by some theorists, this effect was not mediated by social presence within the present study. The effectiveness on usability works contradictory to the impact on the portrait on the user's attitude and benevolence and therefore needs further exploration. A supplementary explanation for the specific working of a portrait on the usability could lie in the fact that individuals may build up attributions to a person that is only virtually or visual present (De Vries & Pruyn, 2007). Adapting this idea to the present finding it is conceivable that the usability increases via the perception of harmonic people and someone *similar* being present on the website. With respect to Byrne, individuals are more likely to evaluate another person (or perhaps online environment) as positive, if they perceive the other person as similar to themselves. Confronting students with a visual cue, showing a harmonic group of young people wearing casual street wear, could act as an information source of the websites target group. In turn, the attribution of being addressed by the website and the perception of happiness and harmony on the picture could result in the intention to really use the website in daily life or to recommend the website to other students. Using portraits to enhance the usability of an informational website is therefore expected to work not just as a social, but also as an individuating cue.

The present study discusses usability in terms of the willingness to use a website in future but not with respect to the actual usability of the site. As a consequence, analysing the

influence of both design properties on the actual usage of an online environment is given as a future recommendation.

Up to now, evidence is submitted for the individual effectiveness of two fundamental drivers on the websites evaluation, trust and usability. Findings certainly have practical implications to the creative process of website designers, especially in situations where it is needed to enhance the user's evaluation or response simply by making use of just one design manipulation.

Notwithstanding, the overall design of a website is perceived by the website users as a whole. According to Gestalt psychology and its "gestalt principles", "the whole is more than the sum of its parts". Objects (or conceivable websites) are perceived as an integrated whole rather than as a collection of several independent elements (e.g. Van Rompay, 2010). Even though every single element has a meaning on its own, in interplay, their meaning may change. Hence, website designers and companies who aim to create a powerful website with respect to the user's response should get straight that elements work together, even in the online environment.

The present research gives an insight into the interplay of portrait and shape designs on the development of benevolence and professionalism. Despite the fact that both design properties influence the perception of benevolence separately, the strongest enhancement of benevolence was found in their interplay. Both studies clarify the importance to combine harmonic as well as conflict oriented design aspects on an informational website. A mixture of harmony, humanity, distance and conflict increased the perception of a website as truly benevolent. Some theories suggest that a combination of formal and informal structures is needed to explore complex relationships. Furthermore, Sitkin (1995) stated that formal structures are able to reduce risk and uncertainty, which in turn increase the development of trust. Even though the context of those studies was different, this idea can be adapted to the online atmosphere as well. Trust, and in particular the perception of benevolence, can be

defined as a “sentiment, or expectation about an exchange partner’s trustworthiness” (Moorman, Deshpande and Zaltman, 1993).

With respect to the actual meaning of benevolence, a needed combination of togetherness, harmony, agreement as well as a “formal” design cue that communicates conflict, strength or even goal-orientation makes sense. Thus, if confronted with a harmonic portrait that represents harmony, friendliness and strong agreement, this is expected to evoke a users feeling of being secure while using the website. Nonetheless, to really trust the goodwill of the website or publisher and their intention to give the best advice, a sense of goal-orientation conflict and assertiveness, in this case communicated through the shape, seems to be needed. In contrast, when confronted with a conflict and distance oriented portrait this by itself embodies a feeling of assertiveness and conflict in a strong way. At this point, a curved overall shape seems to be needed to enhance the perception of friendliness, harmony and being secure. To explain the latter, it can be mentioned that symbolic concepts are structured with respect to the individuals and environments interplay. Such an interaction is containment or closure, or in other words symbolic meanings that are communicated with respect of being outside or inside a circumscribed space (e.g. Van Rompay, 2010). Up to now, some researches represent a step into the direction of communicating image schemas via abstract meanings of designed objects, but this topic needs to be further explored. Nevertheless, using a round overall website shape without rough edges and that surrounds the whole page and menu items may assumably accent the perception of containment. In turn this may promote the feeling of safety and secureness. Because the perception of secureness was not measured by the present study, this may be interesting for future research.

Another interaction of using harmonic portraits in combination with an angular shape was found in the enhancement of professionalism. Evaluating an online environment as professional and competent is expected to work similar to the assumptions made with respect to benevolence.

To sum up, interplay of harmonic and conflict oriented design properties is beneficial to the website users response, especially when aiming at an enhancement of benevolence and the perception of professionalism. The assumption that an enhancement of harmony on the whole website, by manipulating the entire website as warm, sensitive and sociable as possible (using portraits and shape), positively affects the users trust, is unsupported by the present study. Instead, creating an online atmosphere that communicates harmony as well as conflict provides the best results with respect to an informational website.

The last key concern of the present study was to give an insight into the impact of personal differences on the website evaluation, trust or usability. Even though an effect of independent and interdependent self-construal was found, these findings totally are at odds with other researches. Explored by many researches (e.g. Zhang et. al, 2006), a creation of design cues that communicate the characteristics and values of individuals high on independent or interdependent self-construal, results in a product or object favoritism. Within the present study, the effect of self-construal on the perception of benevolence was exactly the other way round. An explanation for this unthought-of result could be a possible contrast effect of the priming task. Based on findings of Strack and his colleagues (1993), priming tasks can either lead to assimilative or contrastive effects. If the participant's attention is anyhow directed to the priming and its influence, this can result in an oppositional way of evaluation or judgment, or in other words "the activated information influences interpretations & judgments in the opposite direction". A good example of this occurrence is given by Kühnen and Hannover (2000). By variegating the subtlety of the self-construal priming through using the scrambled sentences test of Srull & Wyer (1979), it was possible to either reach assimilative judgments to the primed self-construal orientation or opposite ones. Simply by asking the participants to write down all complete sentences of the independent or interdependent self-descriptions after the priming task, in contrast to just writing down the retaining word, this resulted in a contrast rather than assimilation effect. With respect to the

present study, the priming method of using *the warrior story* of Ybarra and Trafimow (1989) actually was not overt, but high on subtlety. Nevertheless, by asking the participants to answer questions about the main goal of the warrior character in written form, this possibly enhanced the recognition of an irrelevant influence, which in turn may influence the website evaluation. Based on present researches, this “awareness” of being influenced in some way, in turn possibly leads to a compensation for this impact by acting exactly the other way round (Kühnen & Hannover, 2000; Strack et.al, 1993). Even though debriefed after the research, it cannot be count out that the participants got a feeling of “being influenced in some way”.

On the other hand, this study puts the fact up for discussion that possibly with respect to the perception of benevolence the effectiveness of different self-construal orientations actually could run the other way round. Up to now, the impact of independent or interdependent self-construal was mainly investigated on the aesthetic preference or evaluation of a product, but not with respect to dimensions of trust.

Because of the importance to get answers on the question how to use and create an online environment that raises profits and is competitive, this research requires follow-up studies that examine the impact of individual differences. Furthermore the findings of the present study evoke interest in analyzing the impact of harmonic or conflict oriented design properties on the users’ response with respect to other individual differences. For instance it may be interesting to take a closer look on the individual differences in the need for belong, or in other words “the need to form and maintain strong, stable interpersonal relationships” (Baumeister & Leary, 1995), or the need for a positive group identity (Turner, 2006).

In conclusion, the present study contributes to literature that underlines the importance of analyzing the online atmosphere with respect to the user’s attitude, benevolence and usability. It further aims to give an impulse to website publishers or web designers to deal with the effectiveness of specific design factors as well as becoming aware of their interplay. The present study stresses the importance to enhance the perception of social presence via

harmonic portraits especially in terms of building up benevolence or the attitude towards the website. Making use of angular overall shapes proves to be important to reach increased usability or the perception of a website as goal-oriented. It further emphasizes the importance of making use of design aspects interplay, especially when aiming to enhance the websites benevolence or professionalism. Hence, the outlined research delivers relevant insight in the underlying mechanisms of the website design and its effects, because *creating websites without the awareness of the design aspects effectiveness and their interplay on the user's perception is like ,building houses without using any guiding principles of construction theory'* (Singh et.al, 2005).

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APPENDIX

Appendix A – Overview of Final Website Versions used in Study I & II

Figure 5. Round website, created with a picture communicating harmony or conflict.

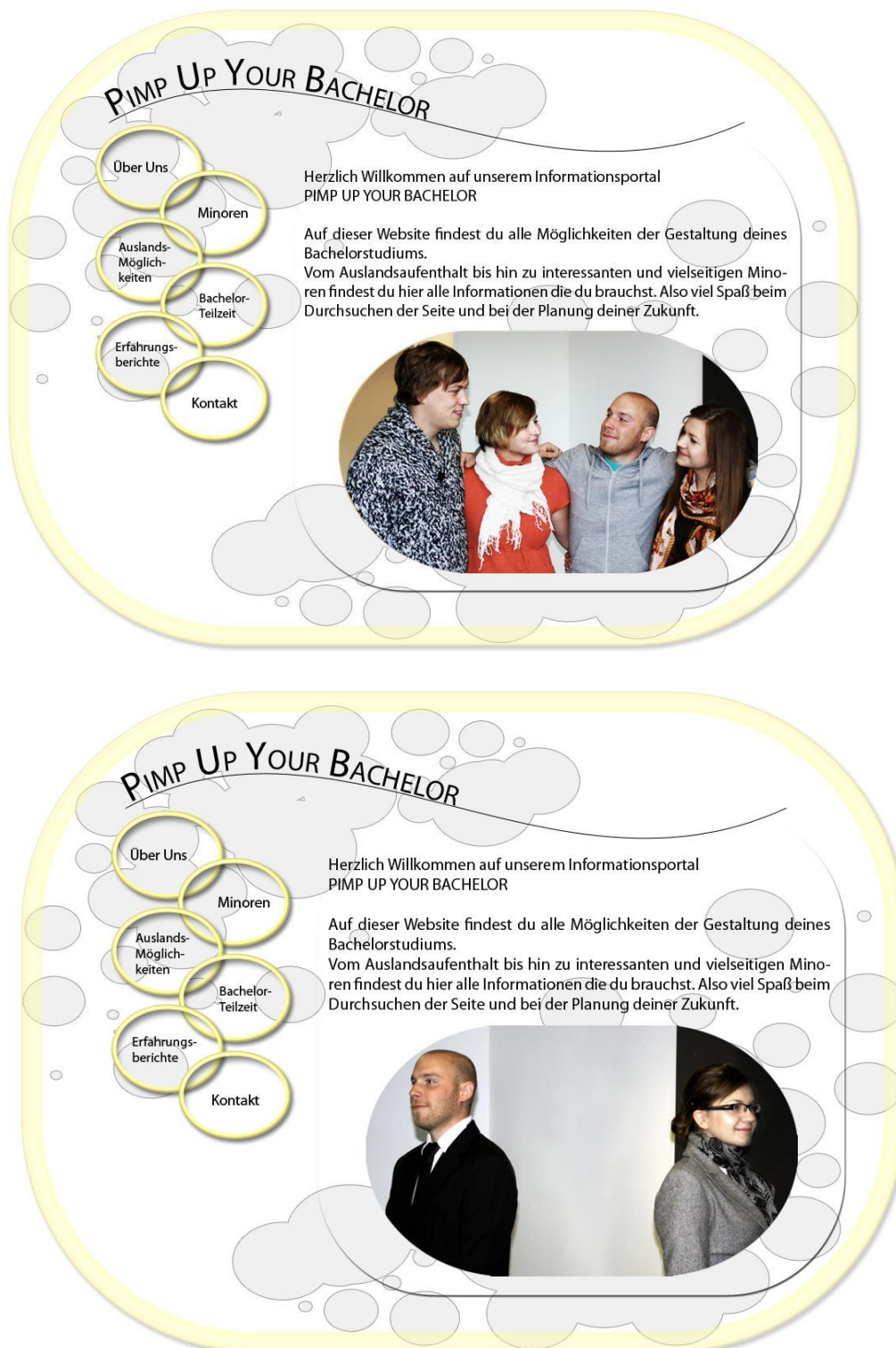
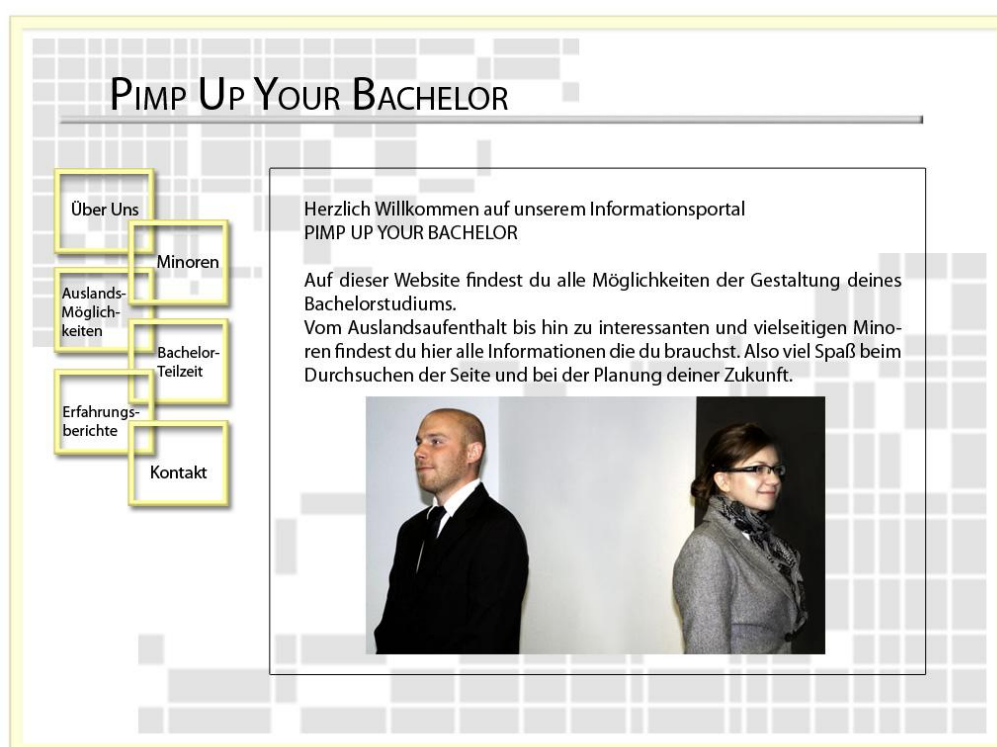
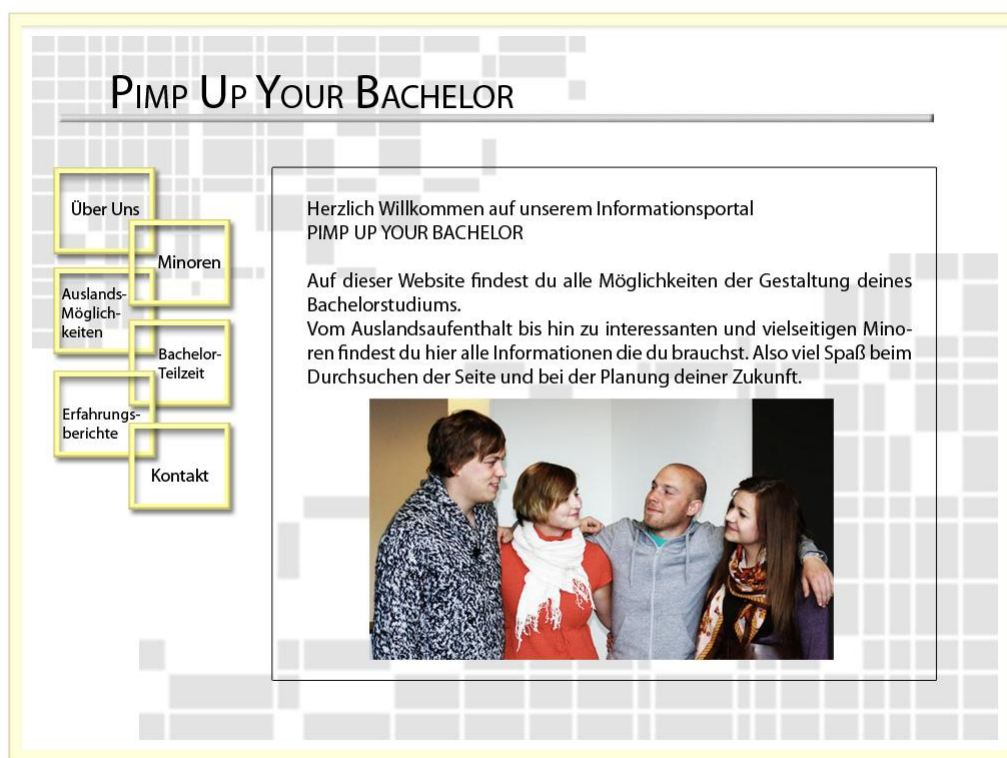


Figure 6. Angular website, created with a picture communicating harmony or conflict.



Appendix B – Items Study I

Variables	Items
Demographics	<p>Geschlecht</p> <p>Alter</p> <p>Nationalität</p> <p>Studienrichtung</p>
Self-Construal	
<i>Independent Self-Construal</i>	<p>Ich mag es einzigartig und in vielerlei Hinsicht von anderen verschieden zu sein.</p> <p>Ich sage lieber offen (direkt) Nein als zu riskieren missverstanden zu werden</p> <p>Es ist wichtig für mich eine lebhaft Phantasie zu haben.</p> <p>Ich gebe mich in der Universität genauso wie ich mich auch zuhause gebe.</p> <p>Ich bin direkt und ehrlich gegenüber Personen, die ich gerade erst kennengelernt habe.</p>

Für mich selbst sorgen zu können steht für mich an erster Stelle.

Ich fühle mich wohl, wenn ich durch ein Lob oder eine Belohnung hervorgehoben werde

Es ist für mich kein Problem in einem Seminar das Wort zu ergreifen

Ich verhalte mich immer gleich, egal mit wem ich zusammen bin

Meine Gesundheit ist mir wichtiger als alles andere.

Meine persönliche Identität, unabhängig von anderen, ist mir sehr wichtig

Interdependent Self-Construal

Selbst wenn ich ganz anderer Meinung bin als die anderen Mitglieder einer Gruppe, vermeide ich eine Auseinandersetzung.

Ich habe Respekt vor den Autoritätspersonen mit denen ich Kontakt habe.

Ich achte Menschen die bescheiden sind.

Ich würde meine eigenen Interessen, für das
Wohl der Gruppe in der ich bin,
zurückstellen.

Bei der Ausbildungs-/Karriereplanung sollte
ich den Rat meiner Eltern miteinbeziehen.

Wenn mein Bruder oder meine Schwester
versagen, fühle ich mich verantwortlich

Meine Beziehungen zu anderen ist mir
wichtiger als mein eigenes
Vorankommen.(mein eigener Erfolg)

Ich würde im Bus meinem/r Professor(in)
meinen Sitzplatz anbieten

Meine Zufriedenheit ist abhängig von der
Zufriedenheit der Menschen um mich herum.

Ich würde in einer Gruppe bleiben, wenn sie
mich braucht, auch wenn ich in dieser Gruppe

nicht glücklich bin.

Es ist mir wichtig von der Gruppe getroffene
Entscheidungen zu respektieren.

Ich fühle mich wohl dabei viel ältere
Menschen zu duzen, kurz nachdem ich sie
kennengelernt habe

Es ist wichtig für mich, in der Gruppe in der
ich bin, die Harmonie aufrechtzuerhalten.

Identification with Students

Ich identifiziere mich mit typischen
Studenten.

Ich sehe mich selbst als Teil einer normalen
Studentengruppe

Attitude

Ich finde die Website:

schön,
zu mir passend,
vergnüglich,
spannend,
schön gesehen zu haben,

Benevolence

Ich gehe davon aus dass die Absichten von
Pimp-up-your Bachelor wohlwollend sind.

Ich gehe davon aus das Pimp- up- your
Bachelor die Interessen der Studenten vor ihre
eigenen stellen.

Ich gehe davon aus das Pimp up your
Bachelor es gut mit den Studenten meint.

Social Presence

Die Webseite strahlt eine gewisse Art von...

Menschlichkeit aus

Persönlichkeit aus

Menschliche Wärme aus

Sensibilität aus

Geselligkeit aus

Usability

Ich würde die Informationswebsite in Zukunft
als Informationsquelle nutzen

Ich würde beim Benutzen der Website meine
persönlichen Daten hinterlassen

Ich würde diese Website an andere weiter

empfehlen

Ich würde die Informationen der Website in
meine Studienplanung mit einbeziehen.

Manipulationcheck

Harmony

Die Webseite wirkt auf mich:

warm

harmonisch

umsorgend

gruppenzugehörig

einfühlsam

Conflict

ichbezogen

kühl

sachlich

kompetitiv

Zielorientiert

Durchsetzungsfähig

Unpersönlich

Appendix C – Items Study II

Variables	Items
Demographics	<p>Geslacht</p> <p>Leeftijd</p>
Attitude	<p><u>Ik vindt de website:</u></p> <p>bij mij passen,</p> <p>leuk,</p> <p>plezierig,</p> <p>spannend,</p> <p>leuk om gezien te hebben</p>
Benevolence	<p>Ik ga ervan uit dat de intenties van de “Pimp-up-your-Bachelor- website goedwillend zijn</p> <p>Ik ga ervan uit dat “Pimp-up-your-Bachelor” het interesse van de studenten voor hen eigen interesse stelt.</p> <p>Ik ga ervan uit dat “Pimp-up-your-Bachelor” het goed met de studenten bedoeld.</p>

Usability

Ik zou deze informatie website in toekomst
als informatiebron willen gebruiken

Ik zou tijdens het gebruik van deze website
mijn persoonlijke data op de site achterlaten

Ik zou deze website bij andere studenten
aanbevelen

Ik zou de informaties op deze website bij mijn
studiekeuze betrekken

Goal-Orientation

De website komt ... over

doelgericht,

gericht,

doelmatig

Professionalism

De website komt... over

professioneel

competent
