

# Priming and Context Effects of Banner Ads on Consumer Based Brand Equity: A Pilot Study

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**Abstract.** Banner advertising is usually placed on suitable, highly frequented websites. The extent to which the brand of a banner ad and the brand of the website influence each other, has not yet been sufficiently investigated. This article provides initial results based on a pilot study which reveals that a positively perceived website can shift a negative banner perception. Furthermore, it is shown that a congruence between banner ad and the website plays an important role. Congruent content supports each other and noncongruent content counteracts the intended advertising effect. Although the study cannot yet be considered as conclusive, the results have the potential to inform entrepreneurial practice on how and where ads should be placed.

**Keywords:** Context effect · Assimilation and contrast effects · Congruency · Priming · Banner

## 1 Introduction

Banner advertisements, namely the advertising on websites, are indisputably important and often part of a company's communication mix. The main purpose of display advertising is to deliver general advertisements and brand messages to site visitors. A current study suggests that digital ads have high growth rates if compared with all advertising channels throughout the world. Particularly boosted by the considerable rise of cost efficiency-driven strategies, banner ad expenditures are forecasted to increase by +12.4% in 2016 and +9.6% in 2017 [1]. So, given that banner ad investment will increase, the effectiveness of banner advertising is extremely important for both advertising practitioners and for academics [2]. For example, a recent article focusing on practitioners shows that the recommendations of business consultants are misleading given that they do not adequately capture the effect of banners [3].

In order to evaluate the effectiveness of banner ads, companies usually fall back on click-through rates (CTR). In addition, they may capture constructs like attention, recall, recognition, etc., or/and they measure some long-term communication effects, such as attitude changes [4, 5]. However, research on how banners influence the effectiveness is still in its early stage [2]. At the same time, a number of studies came to controversial empirical results. Some of these are exemplified in the following section.

Based on the observation that people searching for specific information on the web tend to ignore even large, colorful banners that are clearly distinguished from other items on a website, a banner blindness view was identified [6]. This tenet is backed inter alia by the observation of Spool et al. [7] that participants in a usability test largely overlooked banners. Even ads which were partly animated were largely ignored by participants. In this context, subjects had obviously learned to ignore banner ads while searching for information. In this vein, if assuming that the CTR is an appropriate measure to capture the effectiveness of banners, everything has to be done to ensure that the visitor's attention is directed towards the banner. Researchers who follow this approach argue that banner ads must be designed with bright colors, they should be animated and should have an impressive size [8, 9]. This view, however, is not supported by Burke et al. and Bayles [10, 11]. Their results demonstrate that such banner attributes do not increase either the recall or the recognition. Rather it was shown that participants had significantly worse memory for the animated banners than for the static ones [10]. On the other hand, some studies provided evidence for a positive advertising effect of animated banners in terms of attention, recall, recognition and CTR. Li and Bukovac (1999) show that animated banner ads resulted in quicker response times and in better recall. Additionally, they found that larger banner ads lead to a better comprehension and a higher CTR in comparison to small banner ads [12]. The study by Schweiger and Reisbeck (1999) also show that the recognition rate of animated banners is higher in comparison to static ads [13].

Research by Pagendam and Schaumburg (2001) may have the potential to reveal some of these inconsistent findings concerning the effect of animation on banner recognition. They examined whether the user mode - "aimless browsing" versus "goal directed searching" - moderates banner effectiveness. In a recall and recognition test, the aimless browsing subjects performed significantly better than goal directed searching subjects [14]. It is possible to misinterpret the findings as Hamborg [4] did by assuming that banner ads have little or no impact if users are in an information-seeking mode. It is claimed here that this only holds true if the measure of the effectiveness focuses on consciously perceived objects. In a study by Kindermann it was revealed that even unconsciously perceived banners have an effect on consumers [15]. In an empirical study on the impact on banner ads, it was shown that the priming effect triggers already existing attitudes towards the advertised brands. If these attitudes are positive or the advertised brands are unknown, then a banner ad will promote the advertiser's intended impact on purchase intention. If, however, the initial attitudes are negative, then the buying intention will be negatively affected by the banner ad [15]. These results do not depend on whether the banner ad was perceived consciously or completely ignored. Taking all these findings into account, it becomes obvious that many, frequently ignored factors, influence how banners affect a target group. Priming is often a factor that is seriously undervalued [15]. Therefore, it is of utmost importance to take priming and related effects into account to understand the impact of banner ads holistically. One crucial related aspect is the context effect. Basically, a context effect describes the influence of contextual information on one's assessment of a stimulus. The impact of the context effect is considered to be part of top-down evaluation (= existing attitudes) of certain stimuli. This effect can impact our daily lives in many ways in terms of word recognition, learning abilities, memory, and object assessment

[16, 17]. As mentioned before, the assessment of an object is dependent on already existing attitudes, but the variance of attitudes towards objects influence each other. This may happen in such ways that the existing attitudes either converge (= assimilation effect) or diverge (= contrast effect).

Such contrast effects are omnipresent in human perception and largely influence the assessments of objects. An object, for example, appears heavier when compared to a light one, or lighter when it is contrasted with a heavy object. The attractiveness of an alternative can be significantly increased if it is compared to a similar but poorer alternative and vice versa [18]. This contrast effect also holds true for the assessment of physical attractiveness of people [19, 20]. On the other hand, a study by Meyers-Levy et al. demonstrates an assimilation effect [21]. This research shows that the comfort level of the floor that shoppers stand on is crucial. When reviewing products the perception of the product's quality is affected and can either lead to higher perceived quality if the floor is comfortable or lower perceived quality if it is uncomfortable [21].

A further assimilation effect was demonstrated by Sigall and Landy [22], which, when superficially compared to the results of the previously discussed studies by Kenrick and Gutierrez, show contradicting results. They showed that the comparison of an averagely attractive person with a highly attractive one leads to an increased perception of attractiveness of the average person. The assimilation of the judgment only occurs when the subjects are perceived as acquainted in some way, for instance if they belong to the same social category. If these examples of different context effects<sup>1</sup> are applied to the effect of banner advertising, then different assumptions can be derived as to how powerful the context effect is. First of all, the banner advertisement and the webpage, where the banner is placed, will influence each other. If an assimilation occurs, a positively perceived banner will positively influence the assessment of the webpage. However, according to Landy and Sigall, this assimilation effect may only occur if the banner and the webpage are perceived in some way as acquainted, i.e. congruent, thus belonging to the same category. In the event of economic products, the question of how a similarity can be established is a pressing one. In the author's opinion, this may be created when the ad product and webpage are of similar product categories. For example, when a banner for drills is displayed on a web shop that offers tools. In such a case, the banner and the website are congruent. But even if congruence can be assumed, the estimation of causality seems unclear. It can be assumed that the opinion of a webpage affects the banner evaluation, or that the banner changes the assessment of the webpage. Both directions are ultimately conceivable. Referring to the social judgment theory [23], the respective involvement of the assessors plays a vital role in the change of attitude. Following this theory, the brand with the high involvement is the independent factor. In this case, the person already has a comparatively stable opinion, and is also ready to defend this opinion. This is described as a high ego involvement [24].

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<sup>1</sup> The shortly described assimilation effect is a frequently observed bias in evaluating a context stimulus. Hence, the assimilation effect can be considered as a part of the more general context effect. The same holds true for the contrast effect.

In line with this argumentation, the following assumption can be made. Since this is a pilot study, it is not the author's intention to formulate hypotheses.

Assumption 1: If objects - webpages and banners - do not belong to a related category and are not expected to appear together, an assimilation effect will only occur if the banner is integrated into the text of the webpage and not, as expected, on the right hand side. This effect occurs, in particular, on websites that report news (e.g. broadcasting companies).

Another point is the congruency between webpages and banner ads. According to the congruity hypothesis, placing congruent ads improves attitudes and buying intentions [25–28]. A possible explanation for this effect may lie in congruent information which increases the processing fluidity [29, 30]. This ultimately results in a cognitive relief [31, 32]. For further information of the underlying relationships see for instance Furnham et al. (2002), Čech (1989), Lull and Bushman (2015), Moore et al. (2005) [25–28]. If these coherences are applied to the question of congruency, then the above mentioned congruence between the webpage and banner advertising plays a decisive role. In the following a further assumption is formulated:

Assumption 2: If a banner is placed on a product-specific web shop, the perceived congruence between the web-shop and the banner plays a significant role. As an example of congruent advertising, a web shop for tools may be applicable, where banners are placed for drills. In this regard, it may not be congruent if lingerie advertising is placed instead of a drill banner. This non-congruence may then have a negative effect on the banner or/and the brand of the web-shop.

## 2 Methodology

In order to test these assumptions, a pilot study was conducted. For this purpose, a sufficient number of suitable brands from both, web-pages and banner brands, had to be found. A research project, conducted in 2014, was used in order to be able to make an appropriate selection out of all the possible brands. This project aimed to establish a new measurement approach for the consumer based brand equity [33]. Out of the 250 evaluated brands, those brands were selected which run a webpage or a web-shop, on which banners can be placed (e.g. broadcasting companies) and brands which use banner advertisings. Additionally, those brands were chosen which were judged to be particularly negative or particularly positive. With these selection criteria in mind, the brand selection shown in Table 1 was made.

As can be seen in Table 1, it was impossible to find really positively or negatively judged brands. Hence, to be able to confirm Assumption 1 the following brands were selected: “Der Standard”, a brand of an Austrian newspaper with a mean value of 1.61, and the most negatively identified brand “Kotte&Zeller” with a mean value of -1.47, were chosen.

To check Assumption 2, a web-shop for tools (“Zgonc”; mean value = 0.19) and a web-shop for cosmetic products (DM”, mean value = 1.33) were selected. Banners

**Table 1.** The selected brands [Scale: +3 = I like it very much” to “-3 = I don’t like it at all]

Brand	Mean	SD	Function
Bosch	1.20	1.32	Banner
Intimissimi	1.42	1.01	Banner
Kotte&Zeller	-1.47	1.68	Banner
Lugner City	-0.92	1.24	Banner
Nivea	1.32	1.38	Banner
der Standard	1.61	1.52	Webpage
DM	1.33	1.34	Web-shop
News	0.03	1.33	Webpage
Zgnoc	0.19	1.42	Web-shop

were placed on the website of these two web-shops as an intervention, once a congruent and once non-congruent banner were placed (see Fig. 2).

### 3 Empirical Results

Altogether 267 subjects completed the three questionnaires (group1 = 87/group2 = 87/control group = 93). As expected, there was no significant difference in age between these groups (group1 = 25.91/-group2 = 26.28/control group = 26.03;  $p = 0.932$ ). The same holds true for gender (chi-square test:  $p = 0.351$ ).

All following results were calculated by means of a one-way between subjects’ ANOVA. The spontaneous “liking of a brand” serves as the depended variable. In this respect, the following question was asked: “Please indicate spontaneously how much you like this brand.” [Response scale: “+3 = I like it very much” to “-3 = I don’t like it at all”]. To reveal any significant differences between all three groups, Fisher’s least significant difference (LSD) was calculated post hoc.

#### 3.1 Assumption 1 - Assimilation Effect

Figure 3 in the appendix shows the stimuli used in group 1, group 2, and in the control group in detail. The results of this experimental part (part 1) are summarized in Table 2. It appears that the brand “Kotte&Zeller” benefits from the generally more positively perceived brand “der Standard”. The significant difference between the control group and group 2 may be explained by the integration into the webpage, which further strengthens the supposed assimilation effect. Overall, the comparatively bad value of the brand “Kotte&Zeller” is being improved by the positive perception of the website. When it is integrated into the webpage, it was found that the assessment improved significantly.

Experimental part 2 shows the same tendency (see Fig. 4 and the results in Table 3). Here, too, the rather negatively perceived brand “Lugner City” is assimilated by the somewhat positively perceived webpage of “News” and thus more positively judged. One further aspect is still worth mentioning: when the banner is integrated into

the webpage, this integration seems to have a negative effect on the perception of the webpage in contrast to part 1 of the experiment. An explanation of this effect could be found in the different ego involvement towards the brands “der Standard” and “News”. It can be assumed that this is due to the worse a priori assessment of “News” when comparing it to “der Standard”. Although this aspect was taken into account in the survey, it was impossible to gain valid data due to an insufficiently large sample size<sup>2</sup>.

### 3.2 Assumption 2 - Congruency

According to Assumption 2, the perception of a website and a placed banner is reduced if the content of these two brands is not perceived congruently. In order to examine this assumption,

- a banner of a lingerie brand (“Intimissimi”) was placed in a web-shop for tools (noncongruent; see Fig. 5) and
- a banner of a drill (“Bosch”) was placed in the same web-shop for tools (congruent, see Fig. 6) and
- the same banner of a drill was placed in a web-shop for cosmetics (noncongruent, see Fig. 7) and
- a banner of a hygiene brand (“Nivea”) was placed in the same web-shop for cosmetics (congruent; see Fig. 8).

All these versions were presented to and assessed by different groups. In addition, all these mentioned brands were presented to and assessed by a control group for means of comparison.

Once again, the assumed tendency was revealed: If the banner and the webpage are congruent in terms of content, it has a positive effect on the assessment of both brands. If, on the other hand, the brands are noncongruent, then the effect is negative. Even if the results are not significant, the tendency is clearly visible (see Tables 4, 5, 6 and 7). An explanation for this effect can be found in cortical relief.

## 4 Discussion and Limitations

The focus of this pilot study was to identify the interaction between banner advertising and the perception of the corresponding website. The theoretical foundation can be derived, among other things, from the context effect or the assimilation and contrast theory. The results show a tendency towards the presumed relationship, although most results are not significant. Due to the variety of different stimuli and the consistent tendency, however, it can be assumed that these results are not accidental. Rather, it can be suggested that these preliminary findings are applicable to real-time corporate

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<sup>2</sup> If from the total number of subjects, those are selected who have a positive opinion of the Brand “News”, then only 28 people remain for all three groups. The clear majority (66.1%) have a neutral opinion about this brand. This leads to the assumption that they do not have a high degree of involvement towards this brand.

settings. With a larger sample size, more significant results can be yielded. Further, the influence of ego involvement could not be taken into account. Data show that the subjects have a highly homogeneous involvement towards the selected brands. This aspect could not be investigated as initially planned. It is therefore recommended that these aspects be explored in more detail in future studies.

Yet the following points can be derived even from the small pilot study:

- When placed on a positive website, a negatively perceived banner gains attractiveness. For companies it may therefore be advisable to look for platforms, which are particularly popular.
- Banner ads should be placed in product-specific web-shops only if they are perceived congruently. This finding may also be applicable to conventional advertising media such as print ads or leaflets. Thus, with regard to congruency, advertisements should use stimuli that are as congruent as possible, so that it is congruently perceived. For example, it would not be advisable to place scantily dressed models on advertisements for tools (e.g. Fig. 1). It is also important to ensure that the ad is placed in a congruent medium. For more details, see the study by Lull et al. [27].

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Fig. 1. Example – non-congruent ad



# Appendix

Questionnaire 1  
n=87  
[group 1]

Questionnaire 2  
n=87  
[group 2]

Questionnaire 3  
n=93  
[control group]



Fig. 2. Stimuli-overview



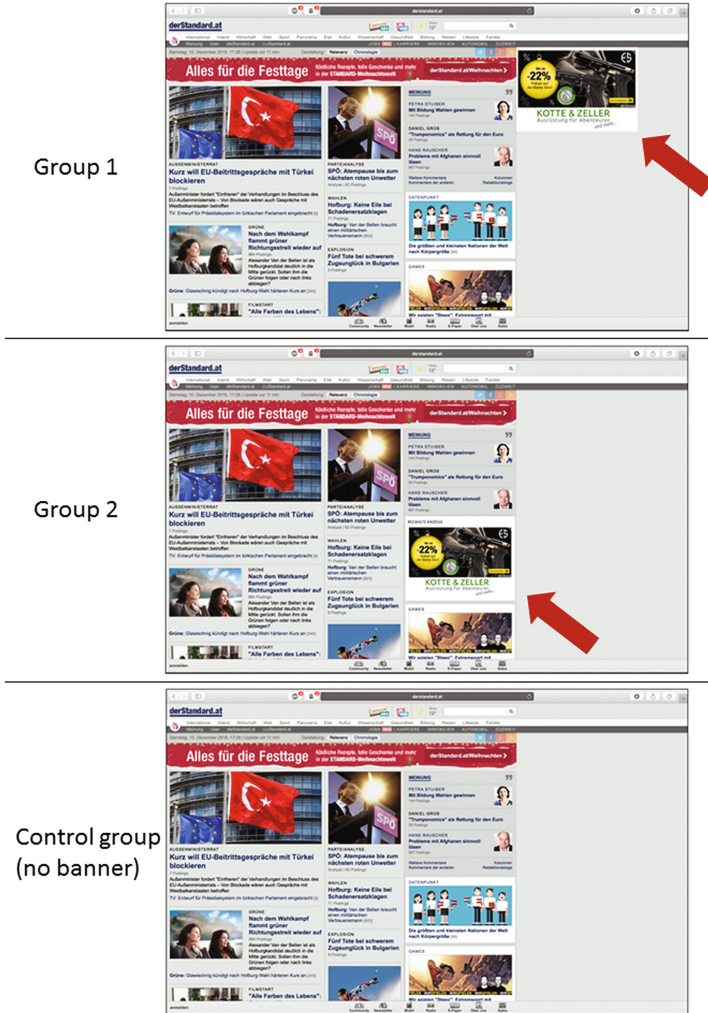


Fig. 3. Assimilation effect – stimuli of part 1 within the experiment

Table 2. Mean values of part 1; Post Hoc: LSD

Brand	Group 1	Control group	p-value	Group 2	Control group	p-value
	n = 87	n = 93		n = 87	n = 93	
Der Standard	1.31	1.38	0.734	1.45	1.38	0.712
Kotte	-1.24	-1.42	0.396	-0.62	-1.42	0.000



Fig. 4. Assimilation effect – stimuli of part 2

Table 3. Mean values of experiment 2; Post Hoc: LSD

Brand	Group 1	Control group	p-value	Group 2	Control group	p-value
	n = 87	n = 93		n = 87	n = 93	
News	0.00	-0.10	0.609	-0.39	-0.10	0.121
Lugner City	-1.14	-1.76	0.001	-1.51	-1.76	0.170

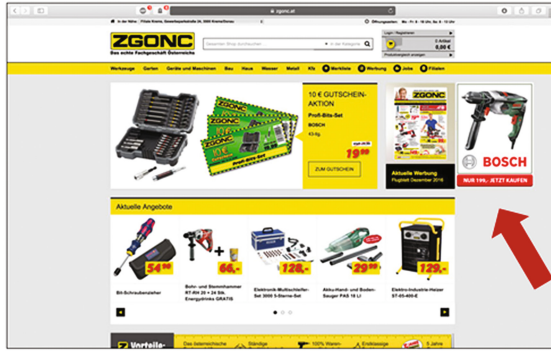


Fig. 5. Congruency – stimuli of part 3

Table 4. Mean values of experiment 3; Post Hoc: LSD

Brand	Group 2	Control group	p-value
	n = 87	n = 93	
Zgonc	-0.15	0.10	0.156
Intimissimi	1.05	1.25	0.250

Group 1



Control group  
(no banner)



Fig. 6. Congruency – stimuli of part 4

Table 5. Mean values of experiment 4; Post Hoc: LSD

Brand	Group 1	Control group	p-value
	n = 87	n = 93	
Zgonc	0.15	0.10	0.156
Bosch	1.23	1.05	0.001

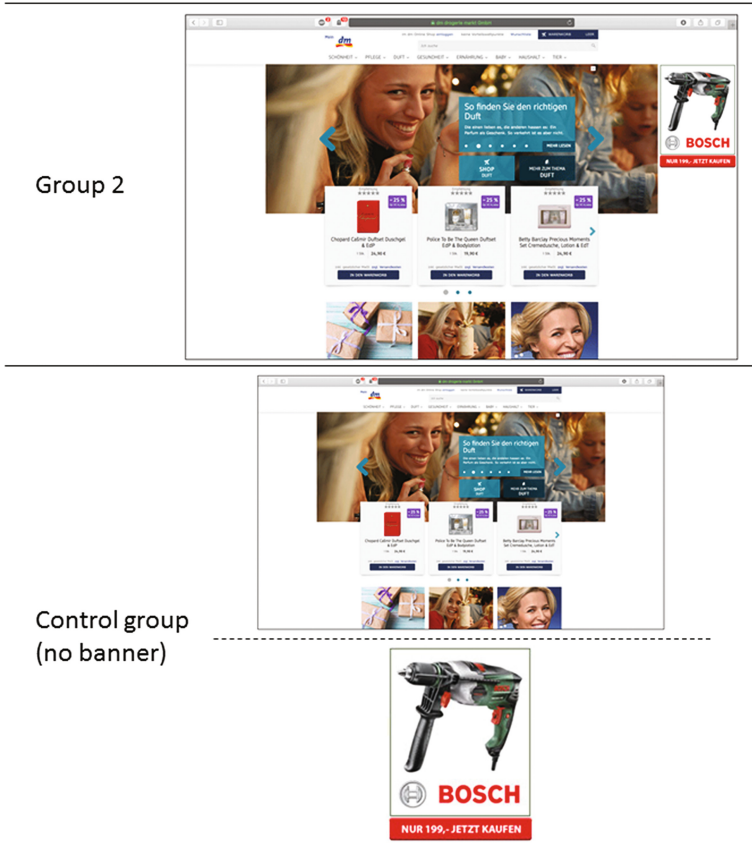


Fig. 7. Congruency – stimuli of part 5

Table 6. Mean values of experiment 5; Post Hoc: LSD

Brand	Group 2	Control group	p-value
	n = 87	n = 93	
DM	1.63	1.75	0.443
Bosch	0.55	1.05	0.001

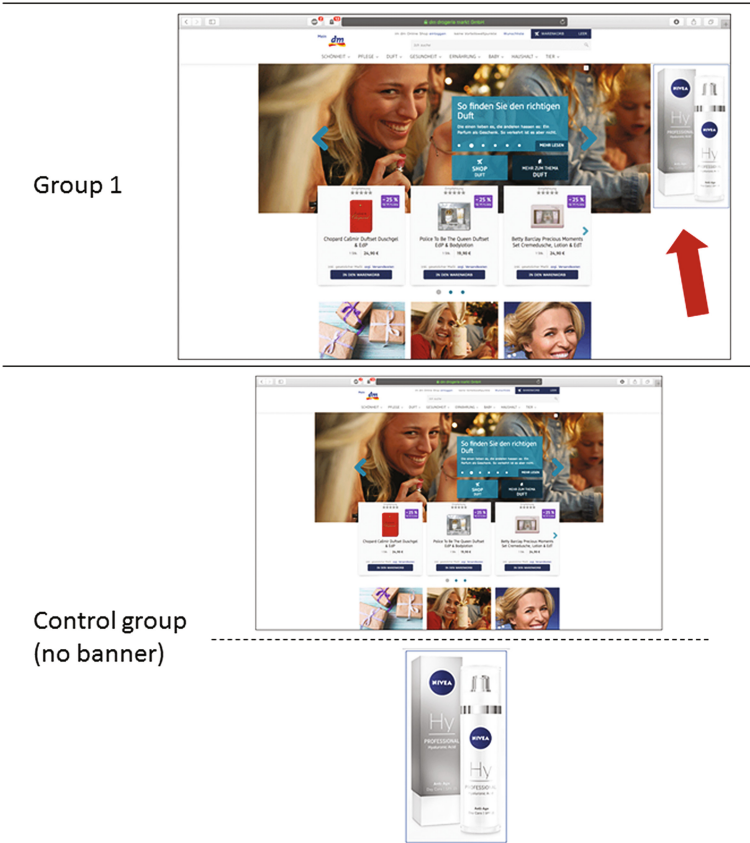


Fig. 8. Congruency – stimuli of part 6

Table 7. Mean values of experiment 6; Post Hoc: LSD

Brand	Group 1 n = 87	Control group n = 93	p-value
DM	1.92	1.75	0.288
Nivea	1.18	1.17	0.952



## References

1. Carat: Carat Ad Spend Report (2016)
2. Li, K., Huang, G., Bente, G.: The impacts of banner format and animation speed on banner effectiveness: evidence from eye movements. *Comput. Hum. Behav.* **54**, 522–530 (2016)
3. Cormann, M.: Multichannel-marketing: Warum der Einzelhandel in der Fashionbranche umdenken muss. *Website Boosting*, pp. 40–44 (2016)
4. Hamborg, K.-C., Bruns, M., Ollermann, F., Kaspar, K.: The effect of banner animation on fixation behavior and recall performance in search tasks. *Comput. Hum. Behav.* **28**, 576–582 (2012)
5. Yoo, C.Y.: Unconscious processing of Web advertising: effects on implicit memory, attitude toward the brand, and consideration set. *J. Interact. Mark.* **22**, 2–18 (2008)
6. Benway, J.P.: Banner blindness: the irony of attention grabbing on the World Wide Web. *Proc. Hum. Factors Ergonomics Soc. Annu. Meet.* **42**, 463–467 (1998)
7. Spool, J.M.: *Web Site Usability: A Designer's Guide*. Morgan Kaufmann, San Francisco (1999)
8. Faraday, P.: Visually critiquing web pages. In: Correia, N., Chambel, T., Davenport, G. (eds.) *Multimedia 1999: Proceedings of the Eurographics Workshop in Milano, Italy, 7–8 September 1999*, pp. 155–166. Springer, Vienna (2000)
9. Sun, Y., Lim, K.H., Peng, J.Z.: Solving the distinctiveness-blindness debate: a unified model for understanding banner processing. *J. Assoc. Inf. Syst.* **14**, 49 (2013)
10. Burke, M., Hornof, A., Nilsen, E., Gorman, N.: High-cost banner blindness: Ads increase perceived workload, hinder visual search, and are forgotten. *ACM Trans. Comput. Hum. Interact. (TOCHI)* **12**, 423–445 (2005)
11. Bayles, M.E.: Designing online banner advertisements: should we animate? In: *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 363–366 (2002)
12. Li, H., Bukovac, J.L.: Cognitive impact of banner ad characteristics: an experimental study. *J. Mass Commun. Q.* **76**, 341–353 (1999)
13. Schweiger, W., Reisbeck, M.: Bannerwerbung im Web Zum Einfluß der Faktoren “Animation” und “Platzierung” auf die Selektion. In: Wirth, W., Schweiger, W. (eds.) *Selektion im Internet*, pp. 221–247. Springer, Wiesbaden (1999)
14. Pagendarm, M., Schaumburg, H.: Why are users banner-blind? The impact of navigation style on the perception of web banners. *J. Digit. Inf. [S.l.]* 2(1) (2006). ISSN 1368-7506. <https://journals.tdl.org/jodi/index.php/jodi/article/view/36/38>. Accessed 10 Apr 2017
15. Kindermann, H.: A short-term twofold impact on banner ads. In: *International Conference on HCI in Business, Government and Organizations*, pp. 417–426 (2016)
16. Brunswik, E.: *Perception and the Representative Design of Psychological Experiments*. University of California Press, Berkeley (1956)
17. Brunswik, E.: Representative design and probabilistic theory in a functional psychology. *Psychol. Rev.* **62**, 193 (1955)
18. Bierhoff, H.W.: *Sozialpsychologie. Ein Lehrbuch* (6., überarbeitete und erweiterte Auflage). Kohlhammer, Stuttgart (2006)
19. Kenrick, D.T., Gutierrez, S.E., Goldberg, L.L.: Influence of popular erotica and judgments of strangers and mates. *J. Exp. Soc. Psychol.* **25**(2), 159–167 (1989)
20. Kenrick, D.T., Gutierrez, S.E.: Contrast effects and judgments of physical attractiveness: when beauty becomes a social problem. *J. Pers. Soc. Psychol.* **38**, 131 (1980)
21. Meyers-Levy, J., Zhu, R., Jiang, L.: Context effects from bodily sensations: examining bodily sensations induced by flooring and the moderating role of product viewing distance. *J. Consum. Res.* **37**, 1–14 (2010)

22. Sigall, H., Landy, D.: Radiating beauty: Effects of having a physically attractive partner on person perception. *J. Pers. Soc. Psychol.* **28**, 218 (1973)
23. Sherif, M., Hovland, C.I.: *Social Judgment: Assimilation and Contrast Effects in Communication and Attitude Change*. Yale University Press, New Haven (1961)
24. Sherif, C.W., Sherif, M.: *Attitude, Ego-Involvement and, Change*. Wiley, New York (1967)
25. Furnham, A., Gunter, B., Richardson, F.: Effects of product-program congruity and viewer involvement on memory for televised advertisements. *J. Appl. Soc. Psychol.* **32**, 124–141 (2002)
26. Čech, C.G.: Congruity and the expectancy hypothesis. *J. Exp. Psychol. Learn. Mem. Cogn.* **15**, 1129 (1989)
27. Lull, R.B., Bushman, B.J.: Do sex and violence sell? A meta-analytic review of the effects of sexual and violent media and ad content on memory, attitudes, and buying intentions. *Psychol. Bull.* **141**, 1022–1048 (2015)
28. Moore, R.S., Stammerjohan, C.A., Coulter, R.A.: Banner advertiser-web site context congruity and color effects on attention and attitudes. *J. Advertising* **34**, 71–84 (2005)
29. Reber, R., Schwarz, N., Winkielman, P.: Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? *Pers. Soc. Psychol. Rev.* **8**, 364–382 (2004)
30. Reber, R., Schwarz, N.: Effects of perceptual fluency on judgments of truth. *Conscious. Cogn.* **8**, 338–342 (1999)
31. Kenning, P.: *The discovery of cortical relief*. Westfälische Wilhelms-Universität Münster (2002)
32. Kenning, P., Plassmann, H., Deppe, M., Kugel, H., Schwindt, W.: Wie eine starke Marke wirkt. *Harvard Bus. Manag.* **27**, 53–57 (2005)
33. Kindermann, H.: A single-item measure approach to consumer-based brand equity based on evolutionary psychology and neuroscience. *J. Mark. Manage.* **3**, 76–82 (2015)