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# Advertising in social network sites – Investigating the social influence of user-generated content on online advertising effects

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**Abstract:** In today's social online world there is a variety of interaction and participatory possibilities which enable web users to actively produce content themselves. This user-generated content is omnipresent in the web and there is growing evidence that it is used to select or evaluate professionally created online information. The present study investigated how this surrounding content affects online advertising by drawing from social influence theory. Specifically, it was assumed that web users sharing an interpersonal relationship (interpersonal influence) and/or a group membership (collective influence) with authors of user-generated content which appears next to advertising on the web page are more strongly influenced in their response to the advertising than unrelated users. These assumptions were tested in a  $2 \times 2$  between-subject experiment with 118 students who were exposed to four different Facebook profiles that differed in terms of interpersonal connection to the source (existent/non-existent) and collective connection to the source (existent/non-existent). The results show a significant impact in the case of collective influence, but not in the case of interpersonal influence. The underlying mechanisms of this effect and implications of the results for online advertising are discussed.

**Keywords:** online advertising, social network sites, social influence, user-generated content, advertising effects

## 1 Introduction

The web, and especially its use, has changed fundamentally over the past decade. Whereas during the initial period of the internet as a mass medium, the

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usage of the web could be characterized as comparatively passive, there is today a variety of interaction and participatory possibilities which enable users to actively produce content themselves and exchange information more or less publicly. Interconnection and participation mark the social character of this so-called social web or web 2.0 (O'Reilly 2005). The development of web 2.0 applications, "which encapsulates [all] websites built to facilitate interactivity and co-creation of content by website visitors in addition to original authors" (Walther, Carr et al. 2011: 26), has changed the web from an initially one-to-many medium to a many-to-many medium or social medium. Looking at people's motivations, social media users primarily seek to express themselves to their peers and encounter such expressions in return; thus, they want to exchange information on various topics, either partially or completely in the public sphere (Shao 2009). As a result, this user-generated content (UGC) is omnipresent on the web, particularly on social network sites (SNS) (Baym 2011), and people can access an enormous variety of opinions, feelings or behaviors regarding almost every topic imaginable. Interestingly, there is growing evidence that people use this UGC to select or evaluate information online, especially information that is not user-generated but created by media professionals or companies such as, for instance, advertising (Metzger, Flanagin, and Meeders 2010; Walther, DeAndrea, Kim and Anthony 2010). Given that increasing numbers of people 'like' certain brands on Facebook, comment on advertising videos on YouTube or post an advertising campaign on their social network profile, the question of how this surrounding UGC affects online advertising becomes more and more pressing. Or, as explained by Campbell and colleagues: "In straightforward terms, firms are likely losing their ability to precisely control messages about their brands" (Campbell, Pitt, Parent and Berthon 2011: 88). Advertising practitioners have recognized this issue but are generally hesitant to deal with the integration of advertising in social media because they lack knowledge regarding the likely effects and consequences (Uzunoğlu 2011). Hence, this paper proposes an approach connecting online advertising, UGC and the effects of UGC on web users by incorporating social influence theories from social psychology. Given that the current proliferation of UGC is much more concerned "with what people are doing with the technology than the technology itself" (Campbell et al. 2011: 87), the present study focuses on this social character of the new media environment. Specifically, it is investigated if and how relationships between initiators and recipients of UGC can evoke social influence and thereby affect recipients' attitudes and behavior – in the present case towards online advertisements posted on SNS.

## 2 User-generated content and online advertising

Following Ha (2008), online advertising is understood as planned communication by professionals, typically placed on third-party websites. The communication aims to influence knowledge, opinions, attitudes and/or behavior regarding brands by drawing on specific advertising material (e.g., banner video ads) and the internet as a communication channel. Academic research on online advertising started around the end of the nineties. Recent reviews have identified around six research focuses (Ha 2008; Kim and McMillan 2008; Li 2011). Next to user attitudes towards online advertising in general, researchers have concentrated on the internet as an advertising vehicle, and on the processing and effects of various advertising material. In addition, researchers have compared advertising in traditional media and in online media in terms of effectiveness and synergies. Scholars have also recently started investigating online conversations about products and brands (electronic word-of-mouth) and, last but not least, a large section of online advertising research has dealt with the internet audience as potential recipients. Interestingly, research has concentrated primarily on the advertisements themselves, commonly neglecting the surrounding context. This is even more surprising when we consider that research on traditional media indicates that advertisements are indeed influenced by surrounding media content (Kirmani and Yi 1991). In line with this, Steyn and colleagues (2011) recently concluded: “The question remains as to what effect consumer-generated content has on the effectiveness of online advertisements” (Steyn, Ewing, van Heerden and Pitt 2011: 139). To the best of our knowledge, only one study (i.e., Walther et al. 2010) has explicitly investigated the influence of UGC on online advertisements, in the context of public service announcements. The results indicate that comments on advertising videos do influence recipients’ attitudes towards the advertised content in the direction of the comment valence. Here, we seek to take up this point and further investigate the role of social relationships between UGC sources and recipients in the context of UGC and advertising effects.

UGC can be understood as “media content created or produced by the general public rather than by paid professionals” (Daugherty, Eastin and Bright 2008: 16); that is, the available information originates from ordinary web users outside of professional routines (OECD 2007; Stoeckl, Rohrmeier and Hess 2007; Shao 2009). Thus, the content is produced without immediate profit motivation (Stoeckl et al. 2007). In addition, researchers agree on UGC being an online phenomenon distributed and accessed via the web (Daugherty et al. 2008; Krishnamurthy and Dou 2008). Finally, most authors consider UGC to be public or at least partially public and permanently available to a certain audience,

thus excluding private one-to-one communication such as e-mail, instant messaging or chat-rooms (Kaplan and Haenlein 2010; Krishnamurthy and Dou 2008; OECD 2007). Looking at UGC in terms of processing by, and effects on, other users, it is to a lesser extent important that the content is actually created by ordinary people, but much more important that the content is perceived as such. To sum up, UGC is defined as all publicly or partially publicly available online information that is initiated by end-users instead of media professionals. Most importantly, the information is perceived as being generated by end-users.

Given that UGC is not the only content type in the current internet landscape, Walther, Tom Tong and colleagues (2011) talk about multiple sources which users can refer to. They differentiate between institutionally authored messages and peer information sources. Whereas the former refers to content created out of professional routines, comparable to content from traditional media, the latter refers to UGC. The two content types not only coexist on the web, but often co-appear on the same website, being mutually dependent. As a result, users may perceive several types of information sources regarding the same topic being possibly influenced by not only a single source, but by the interplay among multiple sources (Walther, Tom Tong et al. 2011). Transferring this to the context of online advertising, we have banner or video ads commissioned by companies or organizations representing institutionally authored messages, while surrounding user posts, comments or ratings make up UGC. Walther, Tom Tong and colleagues (2011) suggest that both sets of material be regarded as social agents which influence the encountering recipients. Consequently, they recommend applying extant social influence theories from social psychology.

### 3 Social influence as collective influence

To date, most research on social influence in online communication has focused on group or collective influence. The SIDE model, proposed by Spears and Lea (1992), is particularly successful in modeling this influence type by encompassing social identity theory (Tajfel and Turner 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher and Wetherell 1987). Besides, Reed (2002) argued for stronger integration of social identity theory in market research. Various experimental studies have validated the SIDE model and shown that collective influence varies depending on whether a personal or social identity is salient (for reviews, see Postmes, Spears, Sakhel and de Groot 2001; Spears, Lea and Postmes 2007). Whereas the personal self can be understood

“as the sum of our traits and attributes” (Spears, Lea, Postmes and Wolbert 2011: 17), the social self encompasses all our group memberships. Social information about group memberships can easily be transmitted via computer-mediated communication and is often available (e. g., nicknames or groups in SNS). Encountering such a social, categorical cue while communicating may activate a respective social self-schema and lead to depersonalization. During this process, people see themselves and others as representatives of a particular group schema rather than as unique individuals. Since these group schemas also describe and prescribe group-appropriate ways to feel and behave, people conform to group norms if the respective group schema is salient (Hogg 2006). Given the case that a personal rather than a social identity is salient, the model assumes reduced collective influence. People who currently view themselves as unique individuals concentrate more on their personal needs and goals.

In applying SIDE, 20 years after its development, to today’s means and habits of online communication, certain limitations become apparent. While SIDE still offers an effective approach to modeling collective influence under the relatively anonymous communication conditions that prevail in many online spaces (Walther et al. 2010), it is not as suitable in explaining influence when communication partners are less anonymous. However, Spears and colleagues (2011) consider that collective influence is possible under such conditions, and propose a refinement of their original assumptions. Reduced anonymity (e.g., by presenting a photograph of a communication partner) does not necessarily lead to a reduction in collective influence. The photograph itself can function as a categorical cue signaling, for example, gender, and presenting somebody as a member of a shared group. As long as this greater visibility still conveys strong categorical cues indicating certain group memberships, counterparts might still be perceived as members of a shared group rather than specific individuals, even though more individuating information is available (see also Rains 2007).

## 4 Social influence as interpersonal influence

Social influence as interpersonal influence becomes increasingly likely with reduced anonymity, since additional options emerge regarding forming or maintaining interpersonal relations (Sassenberg and Jonas 2007). Kelman (1961) argues that people accept being influenced by other persons because they identify with those persons; that is, they view their own relationship with the other persons as a part of their self. Whereas collective influence refers to

identification with a group, interpersonal influence regards identification with a specific person. In both cases, the recipients of messages accept influence because they view the source as being part of their self-concept, either in the form of a self-defining group membership or a self-defining relationship to a specific person. Interpersonal influence in (online) communication can occur when a recipient receives a message from a reference person (interpersonal connection) who he or she identifies with. That is, the person initiating the UGC is a specific, known person, while the recipient has incorporated the relationship to the person as a positive, self-defining aspect in his or her self-concept. Social information (e.g., a photograph or name) attached to the message can lead to the perception of the person as a related reference person (e.g., friend) activating the interpersonal self of the recipient. As a result, attitudes and behavior suiting and maintaining this particular relationship (e.g., friendship) are induced. Collective influence can be defined analogously: It can occur in (online) communication when a recipient receives a message from one or more representatives of a group (collective connection) which he or she identifies with. That is, the recipient has incorporated this group membership as a positive, self-defining aspect in his or her self-concept. Social information indicating group membership (e.g., Nike fans) can cause the recipient to categorize the source as a group member (e.g., sports or Nike fan), especially if no other social information is available. Given the case that the recipient likewise holds a similar identity, the respective self-schema is activated, guiding reactions to the message (Sassenberg and Jonas 2007).

## 5 Hypotheses

The posting of messages, comments and recommendations means that UGC in SNS is always accompanied by social information about the respective source. Besides names and photographs, recipients of UGC can often find additional social information by clicking on the respective user profile (e.g., place of residence, education, membership of certain groups) (Krämer and Winter 2008). Taken together, these cues enable recipients to recognize the user or allocate him or her to specific categories or identities (Baym 2011; Pagani, Hofacker and Goldsmith 2011). If social selves, as well as fitting social perceptions of communicating counterparts, are salient, influence is likely to occur, in either interpersonal or collective terms. Specifically, we assume influence towards three kinds of advertising effects, as social influence can affect attitudes as well as behavior (Hogg and Smith 2007): attitudes towards a product, product

purchase intention and intention to recommend a product (Fennis and Stroebe 2010). The latter seems to be a particularly important effect in the context of SNS because users can easily recommend a product or advertisement by forwarding a message or pressing the 'like' button in the case of Facebook. Summing up, the following hypotheses are proposed:

- [H1] SNS users receiving online advertising accompanied by positive UGC from an interpersonally connected person show (a) more positive attitudes towards the advertised product, (b) more intentions to buy the advertised product, and (c) more intentions to recommend the advertised product than do users receiving the UGC from an unrelated person (interpersonal influence).
- [H2] SNS users receiving online advertising accompanied by positive UGC from a collectively connected person show (a) more positive attitudes towards the advertised product, (b) more intentions to buy the advertised product, and (c) more intentions to recommend the advertised product than do users receiving the UGC from an unrelated person (collective influence).

Looking at the present occurrence of UGC in and also outside of SNS, the content is often complemented by social cues enabling interpersonal as well as collective influence. As a result, recipients can be influenced by either interpersonal or collective means. Since both kinds are assumed to affect recipients independently, we assume an additive effect:

- [H3] SNS users being interpersonally and collectively influenced by UGC accompanying online advertising show (a) more positive attitudes towards the advertised product, (b) more intentions to buy the advertised product, and (c) more intentions to recommend the advertised product than do users being either interpersonally or collectively influenced (interpersonal and collective influence).

In comparing collective and interpersonal influence, both are evidently based on identification as the underlying process. Whereas collective influence refers to identification with a group, interpersonal influence regards identification with a specific person. In both cases, the recipients of messages accept influence because they identify themselves with a source, that is, they view the source as being part of their self-concept, either in the form of a self-defining group membership or a self-defining relationship to a specific person. Consequently, we assume identification to be a, or *the*, central mechanism underlying the proposed social influence processes.

- [H4a] Users' responses to advertising and UGC proposed in H1 are indirectly influenced by users' interpersonal connection to the UGC source via interpersonal identification with the UGC source.
- [H4b] Users' responses to advertising and UGC proposed in H2 are indirectly influenced by users' collective connection to the UGC source via collective identification with the UGC source's group.

## 6 Method

### 6.1 Design and stimulus

Having two independent variables (i.e., interpersonal connection to the source [existent/non-existent] and collective connection to the source [existent/non-existent]), a  $2 \times 2$  between-subject design was chosen. Four different Facebook profiles were created, differing from each other only in terms of the profile owner (interpersonal relationship vs. no interpersonal relationship to the participants) and the profile owner's assignment to a social group (shared vs. no shared membership with the participants). All the other content was the same within the four profiles. In each profile, the respective profile owner published UGC related to an advertising video, intended to influence the recipients.

Manipulating the two independent variables, the primary objective was to create a controllable, but as realistic as possible, perception situation. Thus, we chose a real professor who is actually teaching the participants as one profile owner, to establish an interpersonal relationship. All participants had known the professor for at least eight months through lectures and tutorials, and the professor was generally liked by the students. Since the professor was relatively young, interacting with him on Facebook would have seemed natural to the students. In contrast to the known professor, an equally young but fictitious professor was used to manipulate the non-existent interpersonal relationship. Collective connection was manipulated by assigning both profile owners either to the university the participants were enrolled in, or as a consultant working for a well-known engineering company with which the students had no relation. Assigning the known professor to an engineering company seemed reasonable, as he actually belongs to a technical institute and is involved in various industry projects. Again, membership of the university was assumed to be an integral positive part of the students' social selves, since all participants had been studying for at least eight months and generally liked the university and enjoyed their studies. In visiting the four Facebook pages, social percep-



tions of the profile owner as well as the recipients' social selves were cued by the name and picture of the profile owner (interpersonal perception and self) together with repeated indication of the group membership (collective perception and self). The latter was displayed in the personal information of the profile owner as well as by adding a wall (a profile space on Facebook where messages to and from the owner are shown) post stating that the person is currently a member of either the university Facebook group or the company Facebook group. In addition, the participants read a short introduction before visiting the respective profile announcing the profile owner and his occupation at the university or company. As a result, we assumed the interpersonal self to be activated when the professor was known, but did not share a common group membership. The collective self should have been activated when the professor was unknown, but worked at the university. Both social selves were assumed to be salient when the professor was known and shared the university membership. Finally, no social self should have been salient when the professor was unknown and was part of the out-group.

Besides this social information, the profiles contained the wall including various messages posted by friends of the profile owner saying hello. However, the topmost entry was posted by the respective profile owner himself, being an original but shortened advertising video by Google promoting the future product Google Glasses, along with a comment by the profile owner. The profile owner had posted the following comment on the wall, immediately above the video: "An awesome project that Google presents here! I will definitely buy those Google Glasses when they go on sale!" The video lasted for one minute and nine seconds and started when the user clicked the 'play' icon. All participants actually watched the video. The advertised product was chosen as Google Glasses, a pair of eyeglasses fitted with a head-mounted display showing information from your smartphone right in front of your eyes. The product was not yet available to the public and seemed appealing to young students.

## 6.2 Participants and procedure

118 students took part in our study. They were asked to visit a Facebook profile and examine it thoroughly in order to evaluate the profile afterwards. Participants were told that the profile was an original profile of a true person. Participants then clicked on a link directing them randomly to one of the four Facebook profiles. After five minutes, the examiner asked the participants to close the profiles and start the questionnaire by clicking on a link. Before leaving, the students were briefly informed of the purpose of the experiment and asked

not to talk about the experiment until the study was complete. At the completion of the study, detailed information about the experiment was sent to each participant by e-mail. Twenty-six participants were excluded from the study subsequent to the experiment, as they were found to have detailed knowledge of the advertised product<sup>1</sup> and therefore much more positive and fixed attitudes and behavioral intentions compared with the other participants, regardless of the experimental manipulation. The results presented below refer to the remaining 92 participants (78 % female; mean age 20.39 years,  $SD = 1.62$ ).

### 6.3 Measures

Attitude towards the product, as well as behavioral intentions, were measured using a Likert scale, as this procedure is a standardized assessment method for consumer evaluations of brands and products (Ajzen 2008). Specifically, attitudes were measured using the mean of five items rated on a 6-point scale ranging from “I strongly disagree” to “I entirely agree”. The items included “Google Glasses are fascinating”, “Google Glasses are a cool invention”, “I like Google Glasses very much”, “Google Glasses are just a toy”, and “I would like to know more about Google Glasses”. Reliability was satisfactory, with Cronbach’s Alpha  $\alpha = .78$  ( $M = 3.91$ ,  $SD = .94$ ).

Purchase intention towards the product was assessed by a 3-item scale. Again the items were rated on a 6-point scale ranging from “I strongly disagree” to “I entirely agree”. This time the items were “When Google Glasses are on sale next year, I will get them”, “I am going to inform myself about the price of Google Glasses” and “I want to own Google Glasses”. Again, reliability was satisfactory, with  $\alpha = .75$  ( $M = 2.64$ ,  $SD = 1.12$ ).

Intention to recommend the product to a friend was measured using a single item, following a study by Bergkvist and Rossiter (2007), who showed that constructs in marketing research can be measured by a single item as validly as by multiple items, provided that the construct is singular and concrete. According to these authors, the present variable represents such a construct, since “it consists of one object that is easily and uniformly imagined [(Google Glasses displayed in the video)], and (...) the attribute of the construct [(recommending something to a friend)] is ‘concrete’, again meaning that it is

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<sup>1</sup> Some of the recruited participants were computer science students. Unfortunately, these participants had heard of the advertised product before the experiment as part of their computer science studies.

easily and uniformly imagined” (p. 176). The item, reading “I would recommend Google Glasses to my friend”, was again measured on a 6-point scale.

The measurement of social identification, interpersonal as well as collective, was based on previous studies investigating social influence and social identification. Since most studies focus on either interpersonal or collective identification the final measures were combined from a range of studies: Walther and colleagues (2010), Sassenberg (2002) and Utz (2003). While the first of these studies assessed collective identification successfully in a very similar research context to that of the present study, the latter two contained items regarding collective as well as interpersonal identification. Finally, the measure of collective identification included four items rated on the 6-point scale outlined above. The items were “I can identify very well with the ‘university/company’”, “I feel strongly bonded with the ‘university/company’”, “The ‘university/company’ is important to me” and “I strongly feel belonging to the ‘university/company’”. Reliability was satisfactory, with  $\alpha = .97$  ( $M = 2.77$ ,  $SD = 1.61$ ). Interpersonal identification was measured on the same scale, including the following five similar items: “I can identify very well with the ‘profile owner’”, “I feel strongly bonded with the ‘profile owner’”, “The ‘profile owner’ is important to me”, “A lot of things said by the ‘profile owner’ are right” and “The ‘profile owner’ acts as a role model to me”. Again, reliability was satisfactory, with  $\alpha = .80$  ( $M = 2.04$ ,  $SD = .73$ ).

## 7 Results

The manipulation check indicated satisfactory experimental manipulation. Participants viewing the interpersonally connected profiles ( $M = 2.43$ ,  $SD = .74$ ) showed significantly more identification with the profile owner as compared to participants viewing the interpersonally unrelated profiles ( $M = 1.68$ ,  $SD = .50$ ;  $F(1, 90) = 32.24$ ,  $p < .001$ ,  $partial \eta^2 = .26$ ). Similarly, participants viewing the collectively connected profiles ( $M = 4.15$ ,  $SD = .92$ ) showed significantly more identification with the profile owner’s group as compared to participants viewing the collectively unrelated profiles ( $M = 1.33$ ,  $SD = .55$ ;  $F(1, 90) = 313.07$ ,  $p < .001$ ,  $partial \eta^2 = .77$ ). However, controlling the randomization of the participants revealed that the four experimental groups did not share equal brand confidence in Google ( $F(3, 88) = 2.70$ ,  $p = .05$ ,  $partial \eta^2 = .08$ ). Stevens (2012) says that chance differences between experimental groups are rather likely when it comes to smaller group sizes, even though participants have been randomly assigned to the different experimental conditions in order to prevent

unintended group differences. He consequently suggests adding such variables as covariates to the analysis if they are assumed to influence one of the dependent variables. Then “covariance is useful in adjusting the posttest means for chance differences” (Stevens 2012: 288). Since confidence in a brand is naturally linked to attitudes and behavior concerning products of this brand, all subsequent tests are multivariate analyses of covariance (MANCOVA), controlling for the unequally distributed confidence in Google.

Hypotheses H1 to H3 predicted that SNS users receiving online advertising accompanied by positive UGC from a person either interpersonally (H1) or collectively (H2) connected to them would (a) show more positive attitudes towards the advertised product, (b) more intentions to buy the advertised product, and (c) more intentions to recommend the advertised product than would users receiving UGC from an unrelated person. In addition, effects should be even more enhanced when being interpersonally *and* collectively connected to the UGC source (H3). A 2 (interpersonal connection existent vs. non-existent)  $\times$  2 (collective connection existent vs. non-existent) between-subjects MANCOVA was calculated testing these hypotheses. The analysis involved attitude towards the product, purchase intentions and intentions to recommend the product as dependent variables as well as brand confidence as a covariate. Pillai’s trace is reported as the test statistic. However, other available test statistics like Roy’s root or Wilks’s lambda revealed exactly the same results matching the assertion of Olsen (1974) that MANCOVA’s test statistics differ little in terms of power when it comes to small or moderate sample sizes.

As assumed, the covariate was significantly linked to the dependent variables,  $V = .11$ ,  $F(3, 85) = 3.60$ ,  $p < .05$ , *partial*  $\eta^2 = .11$ . In addition, there was a significant main effect of collective connection,  $V = .09$ ,  $F(3, 85) = 2.73$ ,  $p < .05$ , *partial*  $\eta^2 = .09$ . In contrast to our assumptions, the effect of interpersonal connection was non-significant ( $V = .04$ ,  $F(3, 85) = 1.18$ ,  $p = .32$ ). The same applied to the interaction term ( $V = .05$ ,  $F(3, 85) = 1.33$ ,  $p = .27$ ).

Looking at the univariate results, the effect of interpersonal connection remained non-significant for all dependent variables (product attitudes:  $F(1, 87) = .15$ ,  $p = .90$ ; purchase intentions:  $F(1, 87) = .87$ ,  $p = .36$ ; intentions to recommend:  $F(1, 87) = .33$ ,  $p = .57$ ). Thus, hypothesis H1 predicting interpersonal influence of UGC was not supported.

Looking at collective connection (univariate results), it significantly influenced users’ purchase intentions ( $F(1, 87) = 3.89$ ,  $p = .05$ , *partial*  $\eta^2 = .04$ ) as well as users’ intention to recommend the product ( $F(1, 87) = 7.74$ ,  $p < .01$ , *partial*  $\eta^2 = .08$ ). However, the effect on product attitudes was non-significant ( $F(1, 87) = 1.57$ ,  $p = .17$ ). More specifically, users that shared a common group membership with the profile owner (i.e., the author of the UGC) showed strong-

er purchase intentions towards the product ( $adj. M = 2.86, SE = .16$ ) than did users with no common group membership ( $adj. M = 2.40, SE = .16$ ). Similarly, users sharing common group membership with the UGC source showed greater intentions to recommend the product ( $adj. M = 3.04, SE = .18$ ) than did users with no common group membership ( $adj. M = 2.32, SE = .18$ ). In conclusion, hypothesis H2 assuming collective influence was supported with regard to users' intentions to buy and recommend the product.

Given the fact that hypothesis H3 assumed enhanced effects for users being interpersonally and collectively influenced as well as the fact that there was a total absence of interpersonal influence indicated by MANCOVA's non-significant result as well as the non-significant univariate results, hypothesis H3 was not tested.

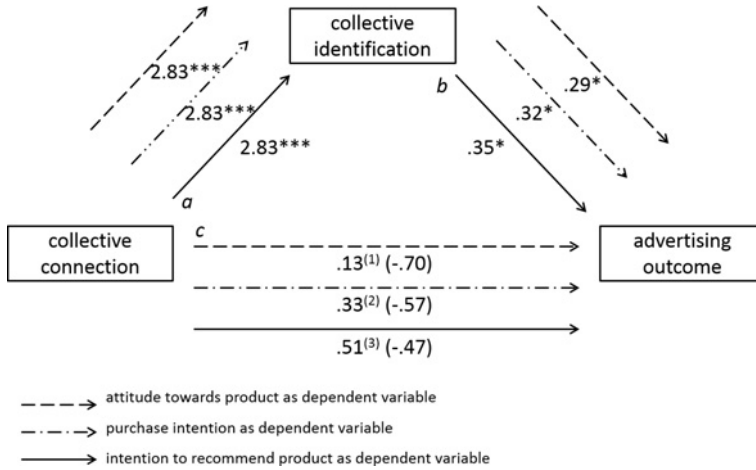
Hypothesis H4 predicted the effects of interpersonal and collective connection proposed in hypotheses H1 and H2 to be mediated by interpersonal or collective identification, respectively. Bootstrap analyses with bias-corrected confidence estimates were conducted to test these mediating roles of identification, employing the methods proposed by Hayes (2013) and using his SPSS macro. Bootstrapping involves computing a confidence interval around the mediated or indirect effect (in our case, 95% confidence). If the value of zero lies outside the interval, the indirect effect is statistically significant at  $p < .05$  (two-tailed). The analyses and bootstrap estimates that follow are based on 5000 bootstrap samples<sup>2</sup>. Looking first at collective connection and identification (Figure 1), collective connection highly significantly predicted collective identification ( $t = 17.69, p < .001, df = 90$ ). Collective identification in turn predicted significantly<sup>3</sup> the respective advertising outcome while controlling for the independent variable collective connection. Bootstrapping revealed two significant and one almost significant indirect effects of collective connection on each advertising outcome via collective identification (i.e., two confidence intervals were entirely above zero and one interval was almost completely above zero).

Calculating the indirect effects by multiplying the point estimations of the respective  $a$  and  $b$  paths presented in Figure 1, we have a point estimation of .83 (95% CI from .15 to 1.57) for the indirect effect on product attitudes, a point estimation of .91 (95% CI from .13 to 1.64) for the indirect effect on purchase intention, and a point estimation of .99 (95% CI from  $-.05$  to 2.21) for the

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<sup>2</sup> Brand confidence as a covariate was not included, since intergroup differences regarding brand confidence were reduced by considering only effects of interpersonal or collective connection, having each time two combined and somewhat similar groups instead of four differing groups.

<sup>3</sup>  $B = .29, t = 2.33, p < .05$ ;  $B = .32, t = 2.14, p < .05$ ;  $B = .35, t = 2.01, p < .05$ , all  $df = 89$ .



**Figure 1:** The indirect effect of collective connection on advertising outcome. Path values represent unstandardized regression coefficients. The values in parentheses represent the direct effects, of collective connection on the respective advertising outcome after the mediator is included. \*  $p < .05$ ; \*\*\*  $p < .001$ ; <sup>(1)</sup>  $p = .52$ ; <sup>(2)</sup>  $p = .15$ ; <sup>(3)</sup>  $p = .06$ .

indirect effect on intention to recommend. As shown in Figure 1, the total direct effects ranged from marginally significant to non-significant, but were all reduced to non-significance when the collective identification was included (values in parentheses). To sum up, participants sharing a collective connection with the UGC source identified more with the source's group as compared to unrelated participants, and this identification led to enhanced advertising outcomes. Specifically, there was a positive, indirect effect regarding each advertising outcome predicting the advertising outcomes to be approximately increasing by one unit (on the applied 6-point scale) as a result of the effect of collective connection on collective identification, which in turn influenced the advertising outcomes. Hypothesis H4b was consequently supported.

Although MANCOVA's results indicated a non-significant effect of interpersonal connection on advertising outcomes, indirect effects mediated by interpersonal identification were yet tested. According to Hayes (2013), significant indirect effects can exist regardless of significant total effects (in our case the effect of interpersonal connection on advertising outcomes). The same methods and procedures as before were applied. This time bootstrapping revealed only one significant indirect effect. Interpersonal connection indirectly influenced attitude toward the product via interpersonal identification. The influence of interpersonal connection on interpersonal identification was highly significant, yielding a point estimation of .74 ( $t = 5.68$ ,  $p < .00$ ,  $df = 90$ ), and interpersonal

identification significantly affected product attitude, with a point estimation of .33 ( $t = 2.15, p < .05, df = 89$ ). Multiplying these estimations together, the indirect effect of interpersonal connection on product attitude came to an estimation of .24, and the 95% confidence interval ranged from .02 to .55, entirely above zero and indicating a significant relationship. In addition, bootstrapping resulted in a marginally (90% CI) significant indirect effect of interpersonal connection on intention to recommend the product. Specifically, interpersonal identification marginally significantly influenced recommendation intention, with a point estimation of .42 ( $t = 1.92, p = .06, df = 89$ ); the total indirect effect was estimated to be .31. The 90% confidence interval ranged from .01 to .73, being entirely above zero. There was neither a significant indirect effect on purchase intention nor significant total or direct effects of interpersonal connection on any of the advertising outcomes. Looking at effect sizes, the indirect effect of interpersonal connection on advertising outcomes amounted approximately to a third of the indirect effect of collective connection, largely due to reduced identification with the UGC source in the case of interpersonal connection. Thus, participants who were interpersonally connected to the UGC source did identify more with the source than unrelated participants, although to a lesser degree when compared to collectively connected persons. As a result, advertising outcomes were less influenced, or not influenced at all, by identification or an interpersonal connection. Hypothesis H4a was supported for product attitudes as the advertising outcome.

## 8 Discussion

SNS users are more likely to buy an advertised product and recommend it to a friend when sharing common group membership with an initiator of UGC commenting positively on the advertisement. Interestingly, the social influence occurred whether or not the source was a complete stranger or well-known to the user as long as a common group membership was established. Surprisingly, there was no such effect regarding the recipients' attitudes towards the product, even though a change in attitude is often assumed to be a precondition for evoking change in behavioral intentions (Petty, Briñol and Priester 2009). Two reasons might account for this result. First, although the study excluded participants who had already engaged themselves in the advertised product prior to the study, one third of the remaining sample had prior knowledge of the product, even if they had not engaged in it. As a result, some attitudes towards the product might have formed prior to the study, which may have been difficult

to change (Eagly and Chaiken 1993). In addition, it is safe to assume that participants generally viewed the product quite positively, since Google Search is used almost every day by the students. This is also reflected by the fact that the average product attitude across all participants was 4.08 ( $SD = 1.03$ ) on a 6-point scale. While purchase intention and intention to recommend were substantially lower ( $M = 2.64$ ,  $SD = 1.12$  and  $M = 2.71$ ,  $SD = 1.31$ , respectively), attitudes toward the product were probably positive prior to the study, meaning that it may have been difficult to enhance the attitudes during the experiment.

In contrast to collective connection, the analysis did not indicate comparable results regarding interpersonal connection and subsequent influence on advertising outcomes. We attribute this lack of interpersonal influence mainly to the experimental manipulation. The use of a professor as the profile owner in the experiment (albeit a professor who is liked by the students) might have been too weak a manipulation to establish an effective interpersonal connection. In addition, participants viewing the profile of the interpersonally related but collectively unrelated professor might have seen the whole manipulation as being somewhat unusual. They knew the professor well, but had never heard of his work at the company. Hence, these odd feelings may have interfered with their judgments, resulting in lower ratings for their attitudes and intentions. On the other hand, it is possible that a congruent or fitting collective connection is a prerequisite for interpersonal influence via interpersonal connection. Lacking such congruency, the interpersonally related but collectively unrelated (out-group member) professor may have been unable to evoke social influence.

According to our results, an interpersonal relationship or common group membership with the source of UGC are both prerequisites to being socially influenced by the source, but are not sufficient, as both kinds of connections enabled and induced identification, while identification (interpersonal and collective) in turn affected attitudes and behavioral intentions. The connections themselves did not exert an influence directly. Since all indirect effects and their parts appeared to be of positive valence, it can be concluded that the greater the degree of identification with the source, the more the effects on attitudes and intentions are enhanced. We consequently recommend including social identification on both levels in future studies as causal or intervening factors.

Summing up, the present results have both theoretical and practical implications. On a theoretical level it can be summarized that the basic assumptions of SIDE (Spears and Lea, 1992) concerning group influence have been successfully applied and supported. In addition, our study suggests adding interpersonal influence as a second type of social influence affecting online users. Given that both SIDE and Kelman's (1961) approach are based on identification as



the underlying mechanism, combining both types of influence is possible and productive. Ultimately, identification (interpersonal as well as collective) can be traced back to the self-concept as incorporating either a positive self-defining relationship or positive self-defining group membership. As a result, both types of social influence can be integrated under this umbrella. Specifically, Brewer and Gardner (1996) proposed an analytical tripartite of the self-concept, differentiating among the personal, the relational and the collective self. We argue for adopting this approach viewing the personal self as the sum of a person's traits and attributes, the relational or interpersonal self as the sum of a person's interpersonal relationships as well as interdependences with specific others, and the collective self as the sum of a person's group membership within the meaning of the social identity approach. Depending on the context and the context's social cues as well as previous activation processes, either a personal, interpersonal or collective self-schema can be salient. In the latter two cases, social influence is possible.

On a practical level it can be argued that media or advertising professionals lose some control over their message effects when publishing content online, since the average users might add some information themselves, for instance, by placing a comment. We assume this UGC influence is not limited to Facebook, but extends to any other social media site that offers the opportunity to create UGC along with advertising and that reveals any social information (interpersonal or collective) about the UGC creator. According to SIDE (Spears and Lea 1992), each little piece of social information may exert social influence. Moreover, it is assumed that the little remaining social information in computer-mediated communication might even exert a stronger influence on the communication partners compared to face-to-face communication (Spears and Lea 1992). For example, a username such as "student85" might out somebody as being part of the student community. Encountering such a social cue while receiving UGC may activate a fitting social self-schema and lead to social influence via identification with the UGC creator. Walther et al. (2010) were, for instance, able to show that user comments on YouTube videos influence the perception of the very same videos. In addition, recipients are influenced more, the greater their identification with the group of YouTube users. Knowing that the commenting persons are YouTube users like the recipients themselves is apparently sufficient to establish a common bond that leads to respective influence of UGC (Walther et al. 2010).

Therefore, advertising practitioners should closely monitor conversations around their online ads, and might also try to initiate favorable conversations themselves. Launching brand communities (Chang, Hsieh and Tseng 2012) or brand pages (Muk 2013) can be appropriate ways to get in touch with custom-

ers, drawing their attention to current advertising activities. If advertisers are able to get in touch with customers, they should try to make use of the existing social relationships among their customers or prospect customers. Getting users to share advertising campaigns among their friends or within their community is highly likely to enhance advertising effects provided that the content is shared in a favorable way. Future studies should therefore look at effects of negative UGC, too.

From the perspective of a consumer or user, it is good to know that one's own content and messages can affect other users, even influencing the effects of professionally created messages. This lends further support to the often mentioned democratization of the internet and web 2.0, but also serves as a reminder to users who generate content on the web of the consequences of publishing, especially when communicating to a mass audience, which is easily achieved in today's online world.

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