



WHAT PHOTOS REVEAL: RECOGNIZING CONSUMER BRAND RELATIONSHIPS FROM SOCIAL MEDIA PHOTOS

*Carolin Kaiser, Lisa Frey,
Björn Ivens*

WORKING PAPER /// NO. 2 / 2016

Copyright 2016 by Carolin Kaiser, Lisa Frey, Björn Ivens & GfK Verein

Working papers are in draft form. This working paper is distributed for purposes of comment and discussion only and may not be reproduced or copied without permission of the copyright holder.

The views expressed are those of the authors and do not necessarily reflect the view of the GfK Verein.

An electronic version can be downloaded from the website of the GfK Verein. www.gfk-verein.org.

What Photos Reveal: Recognizing Consumer Brand Relationships from Social Media Photos

Carolin Kaiser^{*†}

Lisa Frey[‡]

Björn Ivens[‡]

Abstract— *Consumer Brand Relationships have attracted increasing interest in recent years. Consumers perceive brands like humans and interact with them not only in the real world but also in online social networks. They visit brand pages and post brand-related pictures to their profile pages. These pictures reflect their relationships with brands and represent a valuable source of knowledge for marketing, which, however, has not yet been properly examined by existing research. To fill this research gap, a model for characterizing Consumer Brand Relationships in user generated photos is developed based on existing literature and empirically tested. The study reveals that people are able to recognize consumer-brand-relationships in social media pictures and associate them with specific attributes. Their evaluation is only slightly affected by their personal characteristics.*

Keywords— *Consumer Brand Relationships, Social Media, User Generated Content, Pictures*

1 Introduction

Consumer Brand Relationships have become a very popular field of research in marketing in recent years. Consumers project human qualities and personalities onto brands. People interact with brands as if they were human, and they do so in Social Networks. They visit branded fanpages on Facebook and post photos on their private profiles to flaunt themselves with the brand. Pictures posted by users in Social Networks can represent relationships or the demand for them (Stefanone et al., 2011). As a conclusion we state that Consumer Brand Relationships (CBR) can be perceived and differentiated in Social Media pictures.

In her seminal work on CBR, Fournier (1998) used in-depth interviews with three women and identified 15 different relationship types including e.g. enemy and true love. Since then, many more articles have been published

on CBR. These studies have shown that CBR are predictive of certain variables like age (Ji, 2002; Robinson and Kates, 2005), sexuality (Kates, 2000), gender (Monga, 2002) and brand behavior (Aaker et al., 2015; Chung and Beverland, 2006).

Extant studies on CBR have been conducted mainly on the basis of interviews or surveys. However, with the increasing usage of online Social Networks a multitude of photos becomes available giving insight into consumers' relationships with brands in their daily life. While interviews and surveys usually take place in artificial communication situations, pictures in social media capture consumer brand relationships in real life. Compared to textual postings, pictures represent more intimate snapshots of consumer brand relationships (Stefanone et al., 2011).

This paper adds to the literature by examining CBR in Social Media pictures and interpreting human gestures in interacting with a brand in these pictures. In the following sections, we first examine the extant brand relationship literature and identify its relevant dimensions to generate our model. Next, we use an online questionnaire to test our model. Finally, we explain the findings and discuss theoretical and practical implications of the study.

*Corresponding author, carolin.kaiser@gfk-verein.org

†GfK-Verein

‡University of Bamberg

Citation: Carolin Kaiser, Lisa Frey and Björn Ivens (2016), What Photos Reveal: Recognizing Consumer Brand Relationships from Social Media Photos, GfK Verein Working Paper Series, No. 2 / 2016

2 Theoretical Background, Model Development and Hypotheses

People share billions of pictures in Social Networks like Twitter, Flickr or Facebook (Jeffries, 2013; Smith, 2013). These user generated pictures offer insights in the daily life of the user and display their personal beliefs, experiences and attitudes. Users of online networks present themselves in relation with products or services and use brands to show who they are (Schau and Gilly, 2003).

The findings about CBR are widespread. One of the most influential studies is conceptualized by Fournier (1998). She states that people tend to combine brands with human characteristics. Based on these findings many other studies have been conducted (Kates, 2000; Ji, 2002; Robinson and Kates, 2005; Hess and Story, 2005; Lorenz, 2009). Even children are able to build relationships with brands (Ji, 2002; Robinson and Kates, 2005). Ji (2002) states, that if a child is able to name the brand, then there is an existing brand relationship.

Many different CBR concepts have been developed. The relationship types range from *True Love* to *Enemy*. However, no research has been done to analyze and characterize CBR in Social Media photos. To fill this research gap the authors extracted several relationship types and attributes from the existing literature and examined their applicability on Social Media photos. The challenge of this investigation lies in the wide scope of interpretation possibilities. While Fournier (1998) uses attributes like the duration of a relationship or whether it is imposed or voluntary, the authors need to focus on gestures and facial expressions of the consumer on the picture. Table 1 shows the extracted attributes and their assignment to seven different relationship types. For example *Love* usually has a strong positive polarity, is intense and informal. Furthermore, the relationship type *Love* differentiates itself from other relationship types through the combination of the attributes: passion, intimacy and sexuality and through exclusiveness. In contrast *Hostility* is distinguished through negative polarity and intense feelings.

Following the above discussion, and considering several attributes and dimensions based on given brand relationship models, we hypothesize that it is reasonable to expect that:

H1: People are able to identify CBR types and attributes in Social Media photos.

H2: There is a connection between the CBR types and attributes assigned by respondents to Social Media photos.

H3: Personal characteristics of respondents influence their judgement on CBR types.

3 Methodology and Research Design

Participants were recruited via mailing lists from a university and a business company and asked to fill out an online questionnaire. In total, 40 respondents completed the survey in spring 2013. Among them are university students and office workers. Their age ranges from 16 to 59 years. 45% of the respondents are male, 55% are female. Participants of the study were asked to fill out an online questionnaire and to characterize the same 35 Social Media photos on the basis of given attributes and relationship types. These photos show consumers interacting with brands in various ways and were selected from Facebook, Twitter and Flickr by three experts based on the criteria expressiveness and diversity. Besides, respondents' frequency of Social Media usage, their sympathy for the shown brands as well as their satisfaction with their interpersonal relationship status (single, newly in love, in a partnership, newly separated) was measured on a seven point Likert scale ranging from 1='very low' to 7='very high'. On average, respondents spend one hour per day in online social networks (median 3), have a positive attitude for the depicted brands (median 5) and are rather satisfied with their interpersonal relationships status (median 6). 65% of the respondents are in partnership, whereas 28% are single.

In order to test whether people are able to identify relationship attributes and types in Social Media photos (H1) agreement among respondents was measured and Fleiss Kappa (Fleiss, 1971) was calculated. Fleiss Kappa is a statistical measure for inter-rater-reliability and assesses the chance-corrected agreement among people when assigning categories to items. If observed agreement is greater than chance agreement Fleiss Kappa takes values between 1 and 0, whereas if observed agreement is smaller than chance agreement Fleiss Kappa values are between 0 and -1. Especially, values from 0.01 to 0.2 can be judged as slight agreement, 0.21-0.4 as fair agreement 0.41-0.6 as moderate agreement, 0.61-0.8 as substantial agreement and 0.81-0.99 as almost perfect agreement.

For testing the coherence between relationship attributes and relationship types (H2) as well as raters' characteristics and relationships types (H3) we calculated Cramer's V which is a chi-squared statistic and assesses the association between two nominal variables on a scale from 0 (no association) to 1 (maximum association). Values lower than 0.1 are considered as small, values between 0.1 and 0.3 as medium and values higher than 0.5 as high.

4 Results

H1 High agreement ranging from 0.41 to 0.87 was observed among the respondents when assigning CBR attributes and type to Social Media photos (see Table 2). To evaluate whether agreement is only caused by chance, Fleiss Kappa was calculated. All Kappa values are greater than 0, which means that observed agreement is higher than agreement by chance. Thus, H1 can

References	Attributes	Love	Friendship	Affair	Acquaintance	Business Partner	Star	Hostility
Fournier (1998), Kates (2000), Hegi and Bergner (1998)	Polarity	positive	positive	positive	positive	positive	positive	negative
Fournier (1998), Robinson and Kates (2005), Hegi and Bergner (1998)	Intensity	intense	intense	intense	superficial	superficial	intense	intense
Fournier (1998)	Formality	informal	informal	informal	informal	formal	informal	informal
Aaker (1997)	Recklessness	not daring	not daring	daring	not daring	not daring	not daring	not daring
Fournier (1998), Kates (2000)	Reliability	sincere	sincere	sincere	sincere	sincere	sincere	sincere
Fournier (1998), Lorenz (2009), Hegi and Bergner (1998)	Reciprocity	bilateral	bilateral	bilateral	bilateral	bilateral	unilateral	bilateral
Fournier (1998), Lorenz (2009), Hegi and Bergner (1998)	Intimacy	intimate	intimate	not intimate	not intimate	not intimate	not intimate	not intimate
Shimp and Madden (1998), Robinson and Kates (2005), Lorenz (2009)	Passion	passionate	not passionate	passionate	not passionate	not passionate	passionate	not passionate
Cann (2004), Hegi and Bergner (1998)	Sexuality	sexual	not sexual	sexual	not sexual	not sexual	not sexual	not sexual
Ji (2002), Hegi and Bergner (1998)	Fun	fun	fun	fun	fun	serious	fun	serious
Ji (2002), Hegi and Bergner (2010)	Exclusiveness	exclusive	not exclusive	not exclusive	not exclusive	not exclusive	not exclusive	not exclusive
Reissman et al. (1993)	Excitement	exciting	exciting	exciting	not exciting	not exciting	not exciting	not exciting

Table 1: Model for characterizing consumer-brand-relationships

be supported. Respondents were able to identify CBR attributes and types and did not assign them randomly. The degree of agreement varies among CBR attributes. As the Kappa values in Table 2 show, respondents agreed to a higher degree on the attributes sexuality, polarity, fun and recklessness in Social Media photos, whereas they agreed to a lower degree on exclusiveness, reliability and reciprocity. Fair agreement was achieved for CBR relationship type.

CBR Attributes and Type	Observed Agreement	Fleiss Kappa
Polarity	0.80	0.49
Intensity	0.64	0.26
Formality	0.73	0.30
Recklessness	0.75	0.43
Reliability	0.63	0.16
Reciprocity	0.59	0.17
Intimacy	0.67	0.22
Passion	0.72	0.44
Sexuality	0.87	0.64
Fun	0.74	0.47
Exclusiveness	0.61	0.19
Excitement	0.65	0.30
Relationship Type	0.41	0.31

Table 2: Inter-rater-reliability

H2 Cramer’s V was calculated to evaluate the association between CBR attributes and CBR type. The results are presented in Table 3. All values are significant ($p < 0.001$) and show a medium to high coherence between CBR attributes and CBR type. Consequently, H2 is can be supported. Respondents associate CBR types with CBR attributes in Social Media photos not randomly but in a meaningful way. The attributes sexuality, passion and polarity have the highest coherence with the relationship type. Sexuality allows to differentiate the sexual relationship types affair and love from the remaining non-sexual relationships. Passion helps to distinguish the passionate relationships love, friendship, affair and star from the non-passionate relationships acquaintance, business partner and hostility. Polarity separates the only negative relationship hostility from the other, positive, relationship types. In contrast, the attribute reliability has the lowest coherence with the relationship type. The respondents judged all relationship types more sincere than insincere.

H3 To test whether respondents’ characteristics influence their judgment of relationships depicted in photos Cramer’s V was calculated. Results show that personal characteristics have only a minor impact on respondents’ choice of relationship types. Gender ($V=0.09$, $p=0.123$), Social Media usage ($V=0.08$, $p=0.085$), sympathy towards the depicted brand ($V=0.08$, $p=0.303$) and satisfaction with their interpersonal relationship ($V=0.07$, $p=0.191$) have no significant influence. Interpersonal relationship status ($V=0.09$, $p=0.025$) and age ($V=0.09$,

CBR Attribute	Cramer’s V
Polarity	0.63
Intensity	0.50
Formality	0.49
Recklessness	0.55
Reliability	0.32
Reciprocity	0.45
Intimacy	0.43
Passion	0.69
Sexuality	0.66
Fun	0.57
Exclusiveness	0.46
Excitement	0.59

Table 3: Association between CBR attributes and CBR type

$p=0.029$) have a significant but small impact on the evaluation of relationship types. People newly in love tended to choose love more often, singles had a higher preference for acquaintanceship and people within a partnership assigned more often the formal relationship type business partner to photos. Younger people (16-25 years) were more likely to choose the relationship type love, middle aged people (26-34 years) favored the loose relationship types affair and acquaintanceship whereas older people (35-49 years) had a higher tendency to choose the type business partner.

5 Discussion

To the best of our knowledge, this is the first study investigating CBR in Social Media photos. Our findings provide support that people are able to identify and differentiate CBR in Social Media photos. People cannot only assign CBR attributes and types to Social Media photos but also associate CBR attributes with CBR types in a consistent and meaningful manner. Their judgement on relationship types is only influenced to a low degree by personal characteristics. This ensures the general applicability of the model.

Discovering CBR from Social Media photos represents a new valuable way of implicit knowledge acquisition for marketing. The multitude of photos in Social Media provides a broad collection of actual snapshots of people’s relationships with brands in real life situations. Applying the presented model enables brand researchers to study the diverse nature of CBR and brand managers to identify how their brand is positioned in Social Media.

This study represents a first approach to develop and test a model for characterizing CBR in Social Media photos. There are several limitations which will be addressed in future work. First, the sample of respondents was relatively small and homogenous. Most respondents have a high level of education, come from a German cultural background and are satisfied with their interpersonal relationship. Second, the study was based on a small number of Social Media photos. Future research should in-

corporate a larger sample of more heterogeneous respondents and a larger amount of Social Media photos to substantiate the findings of this study. Moreover, this study only addressed the perception of CBR in Social Media photos. Respondents were asked to judge other consumers' relationships with brands. Further insights on CBR in Social Media photos can be gained by asking people who are depicted in the photos about their own relationships with brands. Finally, this research serves as a pre-study for automating the recognition of CBR in Social Media photos. Due to the multitude of photos on Social Media manual coding is only possible to a limited degree. In future work, we aim to develop a system which is able to analyze Social Media photos. The finding, that humans are able to identify CBR in Social Media photos, is an important prerequisite for the automated recognition of CBR.

References

- Aaker, J. (1997). Dimensions of Brand Personality. *Journal of Marketing Research*, 34, 347-55.
- Aaker, J., Fournier, S., and Brasel, S. A. (2015). When Good Brands Do Bad. *Journal of Consumer Research*, 31, 1-16.
- Cann, A. (2004). Rated Importance of Personal Qualities Across Four Relationships. *Journal of Social Psychology*, 144 (3), 322-34.
- Chung, E. and Beverland, M. (2006). An Exploration of Consumer Forgiveness Following Marketer Transgressions. *Advances in Consumer Research*, 33, 98-99.
- Fleiss, J. L. (1971). Measuring nominal scale agreement among many raters. *Psychological Bulletin*, 76 (5), 378-82.
- Fournier, S. (1998). Consumers and Their Brands: Developing Relationship Theory in Consumer Research. *Journal of Consumer Research*, 24, 343-73.
- Hegi, K. E. and Bergner, R. M. (1998). What is love? An empirically-based essentialist account. *Journal of Social and Personal Relationships*, 27, 620-636.
- Hess, J. and Story, J. (2005). Trust-based commitment: multidimensional consumer-brand relationships. *Journal of Consumer Marketing*, 22 (6), 313-22.
- Jeffries, A. (2013). The man behind Flickr on making the service 'awesome again'. www.theverge.com/2013/3/20/4121574/flickr-chief-markus-spiering-talks-photos-and-marissa-mayer (accessed May 11, 2015).
- Ji, M. F. (2002). Children's Relationships with Brands: "True Love" or "One-Night Stand"? *Psychology and Marketing*, 19 (4), 369-87.
- Kates, S. M. (2000). Out of the Closet and Out on the Street!: Gay Men and Their Brand Relationships. *Psychology and Marketing*, 17 (6), 493-513.
- Lorenz, B. (2009). Beziehungen zwischen Konsumenten und Marken - Eine empirische Untersuchung von Markenbeziehungen [Relationships between consumers and brands - An empirical study on brand relationships]. *Wiesbaden: Gabler*.
- Monga, A. B. (2002). Brand As a Relationship Partner: Gender Differences in Perspectives. *Advances in Consumer Research*, 29, 36-41.
- Reissman, C., Aron, A., and Bergen, M. R. (1993). Shared Activities and Marital Satisfaction: Causal Direction and Self-Expansion versus Boredom. *Journal of Social and Personal Relationships*, 10, 243-254.
- Robinson, P. and Kates, S. M. (2005). Children and Their Brand Relationships. *Advances in Consumer Research*, 32, 578-579.
- Schau, H. J. and Gilly, M. C. (2003). We Are What We Post? Self-Presentation in Personal Web Space. *Journal of Consumer Research*, 30 (3), 385-404.
- Shimp, T. A. and Madden, T. J. (1998). Consumer-Object Relations: a Conceptual Framework Based Analogously on Sternberg's Triangular Theory of Love. *Advances in Consumer Research*, 15, 163-168.
- Smith, C. (2013). By the numbers: 104 amazing Facebook Stats. <http://expandedramblings.com/index.php/by-the-numbers-17-amazing-facebook-stats/> (accessed Nov 27, 2013).
- Stefanone, M. A., Lackaff, D., and Rosen, D. (2011). Contingencies of Self-Worth and Social Networking-Site Behavior. *Cyberpsychology, Behavior and Social Networking*, 14 (1-2), 41-49.