Philosophische Fakultät

Patrick Rössler | Jana Bomhoff | Josef Ferdinand Haschke
Jan Kersten | Rüdiger Müller

Selection and impact of press photography

an empirical study on the basis of photo news factors

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PATRICK RÖSSLER, JANA BOMHOFF,
JOSEF FERDINAND HASCHKE, JAN KERSTEN
and RÜDIGER MÜLLER

E-mail: patrick.roessler@uni-erfurt.de; jana_bomhoff@yahoo.de;
josef.haschke@uni-duesseldorf.de; mail@jan-kersten.de; rrcmue@aol.com

Abstract

The selection of 'good' pictures has increasingly become a crucial factor when transmitting news to the recipients. Every day thousands of events are happening and millions of pictures are taken. By choosing photographs for newspapers and magazines, photographic editorial departments want to attract the recipients' attention, evoke emotions and get them to read their stories. But what exactly is a good picture that meets these expectations? Which criteria are decisive for selecting pictures and what effects of this selection can be measured on the recipients' side?

This article presents the results of a research project carried out at the University of Erfurt in 2008 and conducted in collaboration with the German weekly magazine stern. *It deals with the selection and impact of press photography by introducing the concept 'photo news factors'. Applying the traditional news value theory to pictures, photo news factors are defined as selection criteria that, on the part of the communicator, decide whether the press photos are worth publishing. Furthermore, they are assumed to exert an influence on the intensity of attention that a picture arouses.*

Keywords: press photography, news value theory, photo news factors, selectivity, media effects

Introduction

Since the age of modern mass press, which technically allows the prompt reproduction of photographic templates, press photos have become an integral part of media coverage (Wilke, 2009). Photos inspire the reader, generate emotions, condense information and encourage further reading and information seeking (Holtz-Bacha et al., 2006). Apart from a few studies investigating rather general effects of images on the selection of news items (cf. Knobloch et al., 2003), communication research has not yet dedicated too much attention neither to the selection of specific pho-

tos by the photo editors nor to the complex processes of picture selection and reception by the readers.

A classical approach in communication research addressing selection processes is the news value theory (cf. Fretwurst, 2008; Maier and Ruhrmann, 2008; Maier et al., 2010 for an in-depth description of the concept). It is based on the assumption that issues can be assessed on the basis of a catalogue of criteria, the so-called news factors. The resulting news value explains the attention a certain issue attracts in the media coverage. Early research in this field focused on the decision-making of journalists (Schulz, 1976; Staab, 1990a/b). More recent studies investigated to what extent the news value concept can also serve as an explanation for selection and perception of the audience, by guiding the recipients' information processing (cf. Eilders, 1996; 1997: p. 53; 2006).

Research has in common that it focuses almost exclusively on textual reporting and, only occasionally, on TV news (Kästner, 2008; Maier and Ruhrmann, 2008). Despite the fact that press photos are an integral part of media coverage, there is (with few exceptions; cf. Singletary and Lamb, 1984; Wende, 2001) a shortcoming in studies that apply news value theory to photojournalism. This paper presents a prime study on the selection and impact of press photos. Using the concept of so-called *photo news factors*, we introduce an approach into empirical research that transfers news value theory from texts to images and thus allows us to investigate the selection and impact of press photos.

The concept was developed as part of a research project conducted in cooperation with the weekly magazine *stern* and proceeds in two steps: First, the analysis of the criteria photo editors apply when selecting images for a news magazine; and second, an investigation of how these press photos affect recipients. A multi-method study including newsroom observation and interviews with picture editors as well as an experimental survey and in-depth interviews with readers provides a comprehensive view on the relevance of photo news factors for visual communication processes triggered by the mass press.

Theoretical foundations: news value theory

Following the tradition of gatekeeping and news-bias research, news value theory primarily examines journalistic decision-making. However, in contrast to other theories it is assumed that coverage is not necessarily a "distortion" of reality (Grittmann, 2007: p. 80 f.), but that the news selection is based on professional criteria – the so-called news factors (see Staab, 1990a; 1990b: p. 41). The term "news value" was introduced by Walter Lippmann in 1922 when he identified attributes of an event that determine the 'newsworthiness' of a message related to that event

(Lippmann, 1964: p. 230 ff.). Since then, news value theory was established by − inter alia − Östgaard (1965), Galtung and Ruge (1965), Schulz (1976, 1982) and Staab (1990a/b), who developed rather similar catalogues of news factors. To a large part, the present study draws upon the current application of news value theory and its logic to the news processing by recipients (Eilders, 1996, 1997, 2006).

Furthermore, recent research has begun to expand news value theory to the relevance of visuals. Ruhrmann et al. (2003, 2007) ascertained that from a journalist's point of view the criteria 'availability of images', 'visuality' and 'visualization of emotions' have gained significance for the selection decision over the past years. Similarly, Harcup and O'Neill (2001: p. 274) propose to include the factor "picture opportunities" (although as a subcategory of "entertainment") in a contemporary set of news values after evaluating Galtung and Ruge's original criteria in a content analysis of UK national newspapers. In her pilot study based on think-aloud-protocols, Kästner (2008) connected a content analysis of TV news visuals with audience responses. Her results indicate that the strength of visuality, representing a dominant news factor for audiovisual material, exerts an influence on both the cognitive and the emotional processing of news. Despite these findings, research provides little evidence whether news factors can help to explain the structure of visual news coverage. Accordingly, Grittmann (2007) stated that research does not analyze specific news factors of visualization, but visualization is simply seen as another news factor (p. 83).

Therefore this paper neither deals with the question to what extent news selection is influenced by the 'availability of images' nor does it analyze the news factor 'visualization' as a whole. It rather focuses on the image-inherent news factors of visualization − the so-called photo news factors.

Photo news factors

Photo news factors are defined as selection criteria that, regarding the communicator's side, determine whether a press photo is worth publishing. Furthermore, on the part of the recipients, they are ascribed to have an influence on the attention that a picture attracts. The catalogue used in the present study includes eight different photo news factors: *damage, violence/aggression, controversy, celebrities, unexpectedness, emotions, execution and technique,* and *sexuality/eroticism.* The selection of these factors results from the factors (and whole factor-catalogues) that have previously been identified in news value research. In addition, it considers specific requirements when applying news value theory to photos: Photo news factors have to operate primarily by visual representation

Table 1. *Selected photo news factors.*

News factor		Source
Damage Violence/Aggression Controversy	commonly subsumed under the factor *Negativism*	
Celebrities Unexpectedness		cf. Wende (2001)
Emotions		cf. Eilders (1997), Ruhrmann et al. (2003, 2007)
Execution and Technique		cf. Wende (2001)
Sexuality/Eroticism		cf. Eilders (1997), Ruhrmann et al. (2003)

and with only a minimum of textual contextualization, categorization or explanation (cf. Wende, 2001: p. 54), which led to the exclusion of news factors which cannot be applied to images (see Table 1). Hence, the catalogue of photo news factors primarily is constituted from the inherent picture content and only secondarily from the textual contextualization.

The factors *damage*, *violence/aggression, controversy, celebrities,* and *unexpectedness,* previously taken into account by classical factor catalogues (cf. Eilders, 1997; Schulz, 1976; Staab, 1990), were included in the catalogue following Wende (2001). Based on the arguments of Eilders (1997) and Ruhrmann et al. (2003) − and especially after preliminary discussions with journalists from the *stern* photographic editorial department − the factor *sexuality/eroticism* was added. The particular nature of pictures to represent emotions and transmit them visually was considered by including the factor *emotions* into the catalogue of photo news factors (cf. Döveling, 2005). The factor *execution and technique* (which includes aspects such as color, contrast, light, unexpected perspectives and dramatic effort) refers to the photographic quality of images and completes the set of news factors assumed to be of relevance for press photography. Apart from the latter, the catalogue thus consists of factors that were hitherto used in traditional catalogues, which is in line with Singletary and Lamb (1984) who stated that "photos could be measured against the yardstick of the traditional values and they typically focused on a narrow range of those values" (p. 108).

However, the theoretical foundation of news factors (and, as a consequence, of photo news factors as well) still constitutes a major problem

in news value research. A possible derivation of negative factors (e. g., violence, damage) is offered by Shoemaker (1996) who explains the affinity to a negative presentation of events by genetic and cultural predispositions. An exhaustive explanation of all factors cannot be provided here as it would go far beyond the scope of this article but can easily be found elsewhere (Maier et al., 2010).

For a better understanding of how this catalogue originated, another key premise needs to be explained: The factor "personalization" which is frequently cited in earlier studies of textual coverage is regarded as a constant for photo journalism. This decision is based on the results of Grittmann (2007: p. 66) who, in a meta-research of previous content analyses of press images, ascertained that "in reference to the empirical results (…) people shots are clearly dominant" (see also Fretwurst, 2008: p. 5 f.; Wilke, 1999: p. 165). As a consequence, from an analysis of a given image we cannot assert whether it actually results from a process of "personalization" − or is nothing more than a depiction of people because picturing people qualifies as a constant prerequisite of photo journalism practice.

Overall, the present study investigates a catalogue of eight photo news factors (see Table 1). Although these factors were already identified previously in some news value research on text and/or images (cf. Wende, 2001), they have neither been empirically tested with regard to their relevance as selection criteria for picture editors nor to their impact on the reader.

Model for the selection and impact of press photos

To embed the photo news factors into a theoretical concept which equally captures both the selection and impact processes of photos on communicators' and readers' side, a process model (see Figure 1) was developed. This model is based on the dynamic-transactional approach (hereinafter referred to as DTA) which was first established by Werner Früh and Klaus Schönbach in 1982. The model behind the DTA combines the two perspectives of a 'stimulus-response' and a 'uses and gratifications' approach as reciprocally-influencing components. Hence, the strict distinction between dependent and independent variables is dissolved; the potential effects of the media arise from the media message in connection with the active assignment of meaning by the recipient (transaction). The 'stimulus' has no fixed identity, and the dimension of time (dynamic) is an integral part of the model (see Früh and Wirth, 1992 for the only depiction of DTA in English language). The resulting process model focusses on inter-transactional processes (between the two actors) as well as on intra-transactional processes (within each of the actors). In German communication research the DTA is one of the most common con-
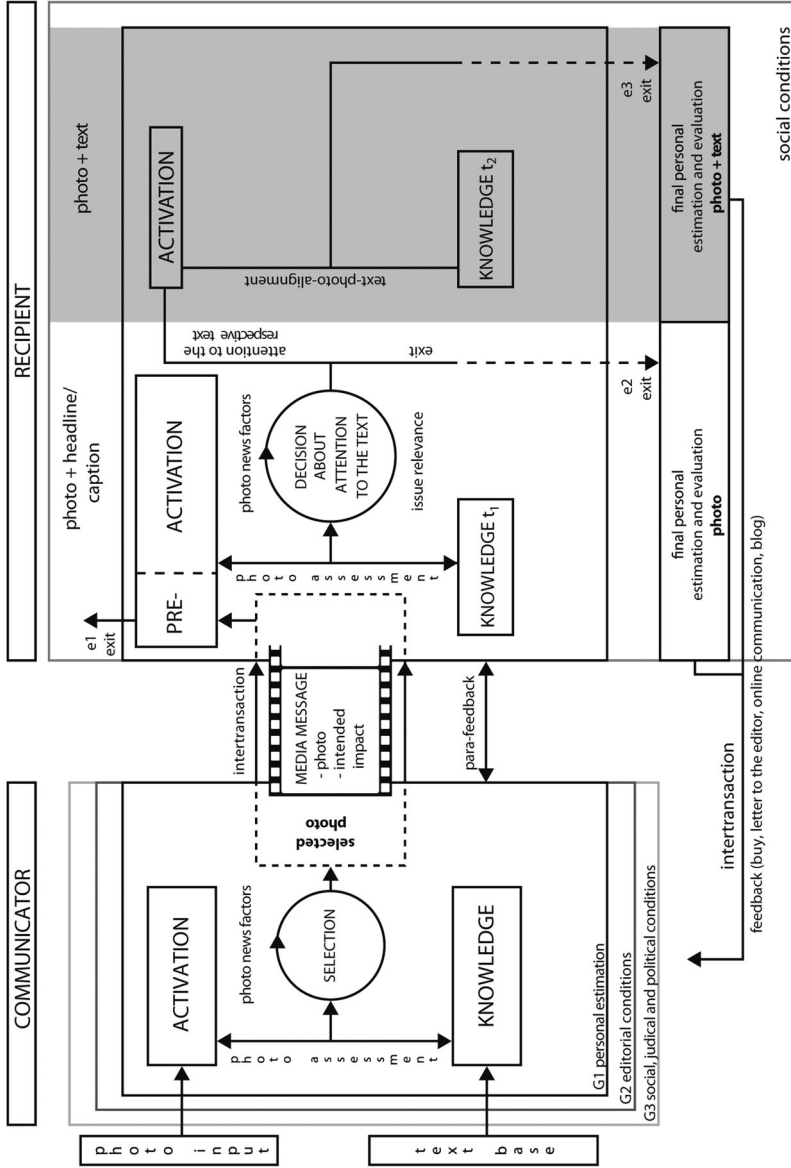
Figure 1. *Model for the selection and the effect of press photos, based on the dynamic-transactional approach (see Früh, 1991: p. 53).*

cepts of mass communication research (see most recently Früh, 2001; Wünsch, 2007).

Our application of the DTA to the process of press photo selection and reception leads to an adapted model of the original, rather universal concept (see Figure 1). On the communicator's side the adapted model integrates (1) the multi-level gatekeeping approach (see e.g., Robinson, 1973; Shoemaker, 1991; Shoemaker and Vos, 2009) and (2) the news value theory modified for picture selection. The intra-transaction (consisting of activation and knowledge) emerges as a combination of photo input, textual basis and background knowledge: Checking the incoming photos the editor gets activated to select a suitable photo for the context which has to be illustrated. Usually he or she receives these pictures by photo agencies, correspondents or in-house photographers. Based on prior knowledge and the corresponding text the editor evolves an estimation of the photo which is also influenced by photo news factors. Adjusting this personal estimation to the editorial and societal framework, it ultimately results in a selection of photos for publication. Once printed and distributed the photos initialize the inter-transaction between communicator and recipient while crystallizing both an intended impact on the reader and a specific constellation of photo news factors. As a consequence, the reader is supposed to get animated by the photo to read the corresponding text; and furthermore to get committed to the medium as a whole.

On the recipient's side the adapted model integrates aspects of the adapted news value theory, concepts to explain emotional media effects (see Scherer, 2001) and approaches from research on cognitive structures and schemata (see Matthes, 2004; Schenk, 2007). Following the logic of the DTA the media message is considered as a press photo in a news magazine. It is characterized by a certain news value (expressed by a particular constellation of photo news factors) and comes along with a corresponding caption. This caption is necessary as we assume that a photo usually cannot stand for itself. That is why the reader needs a minimum of textual information in order to understand the photo's context.

Before getting activated by a photo, the viewer runs through a phase of "pre-activation", resulting in an unconscious decision to either turn towards the picture more intensely or to continue thumbing through the magazine (exit option A1). This assumption is based on evidence from cognitive psychology on pre-attentive reception, according to which stimuli get classified in a single blink of an eye. This first spatial overview provides information for further selection (cf. Sachs-Hombach and Schirra, 1999: p. 38). Following this step, the photo may serve as an

initial stimulus of activation, which influences the reader's attention and activation level (see Früh, 1991: p. 35).

What happens at this point in time is an affective classification of what has been seen rather the coordination with the recipient's knowledge. If the photo triggers the willingness of reception (e. g., by physiological and/or emotional arousal), recipients' attention will be increased. As the emotional impact of images is confirmed in numerous visual communication studies (e.g., Früh and Fahr, 2006; Holtz-Bacha et al., 2006; Knieper, 2006; Petersen, 2006), possible consequences can be described as (1) a positive emotional activation, (2) a negative emotional activation, or (3) an emotional non-activation, all depending on the particular constellation of photo news factors. The dimensions of emotionalization mentioned here are derived from the 'Multi-Component Process Model' of Larson and Diener (see 1992: p. 31). The authors emphasize that the emotions experienced by an individual media user cannot be described solely by positive and negative effects, but also by the degree of physiological arousal.

In the case of a reader's intra-transaction (photo assessment), the mediated stimulus (message) and the cognitive schemata (recipients' previous knowledge) are permanently adjusted. With reference to Früh and Schönbach (1982: p. 33) knowledge can be described as the capacity to understand more or less complex information within the process of message reception. Once more, it is assumed that the constellation of photo news factors determines how intensely the stimulus gets connected with the recipient's cognitive apparatus (see Matthes, 2004: p. 547 for an overview of schemas and their relieving function). At this point, the headline or caption associated with the photo plays a role in understanding. After looking at the photo, the viewer turns to these textual features which contribute substantially to the actual contextualization of the photo (concerning the ambiguity of visual stimuli see Eilders, 1997: p. 86 f.). The reception and processing of the media message can lead to an increase of knowledge, and at the same time to an increase of the activation level, too. Whether the recipient, as predicted by the DTA, moves from this increased level of attention to a second phase in which he actively seeks more information, for instance, by reading the corresponding article, depends on the individual *issue relevance*. In a study on the reception of issues relevant for personal attitudes, Knobloch-Westerwick emphasized "that the (reader's) attention to those issues strongly depends on the personal importance of the topic" (2007: p. 60). We expect the issue relevance to be of importance for the reception of press photos as well.

In conclusion, we assume that the recipients' emotionalization increases with an attractive key stimulus (photo with high news value)

combined with a major interest in the topic. Moreover, recipients should take a longer look at such a photo, evaluate it better, and more probably they will memorize it and read the related article.

The model which could only be outlined here in brief additionally sets different exit options and specifies further interaction effects between the constructs described above. For an initial empirical test of some of its components, we focused on four key research questions. Concerning the communicator's side, we asked

1. What factors influence the journalist's selection of photos to illustrate the coverage of a news magazine?
2. What is the role of photo news factors within the selection process?

On the reader's side, we were interested in the following:

3. Which pictures do recipients examine more intensively – and does intensity correspond with the strength of the photo news factor?
4. From all specified photo news factors, which ones are more, which ones less relevant for explaining readers' attention?

Nonetheless, we want to point out that the model has to be seen as a framework where we did not aim at verifying each specified interaction empirically. Therefore, some parts of it, for example the intra-transactions, still remain within the status of a theoretical assumption.

Methodology

Communicators

The empirical fieldwork on the communicator's side included a combination of (1) open, non-participant observations in the picture editor's department of the German weekly magazine *stern,* and (2) problem-centered interviews (Witzel, 2000) with relevant actors in the selection process.

(1) For five days, researchers accompanied *stern*'s photo editors during the origination process of one particular issue of the magazine. The observation took place between March 3 and 7, 2008 in the *stern* publishing house (Gruner and Jahr, Hamburg). It aimed at reconstructing the process of photo selection and filtering out relevant factors for editors' choices, especially the significance of photo news factors. In addition, the workflow in other departments of the *stern* was also observed in order to gain a comprehensive and complete insight into the overall procedures of creating a weekly news maga-

zine. All observations were open but non-participant and supplemented by short interviews to retrieve a maximum of knowledge about the situation. Interviews were conducted in the form of brief requests for clarification, such as incomprehensible acts, unknown people or unusual use of resources (Quandt, 2005: p. 192). For the logging of all observations, previously prepared monitoring guidelines were used.

(2) The survey consisted of open-ended interviews with photo editors of various departments, as well as with the *stern*'s art director and with the secretary to the Head of Department. The interview guide incorporated several topical sections, including questions on (a) 'work processes', (b) 'photo news factors', and (c) 'external factors − gatekeeping'. Work processes (a) elaborated on the professional career of the individual photo editor and his/her departmental responsibilities; additional questions tapped his/her working routines and the importance of work experience. The largest section was based on the catalogue of photo news factors (b); photo editors discussed it with regard to the pictures they had actually chosen during the observation period (1). Editors were advised to reflect particularly on the significance of the eight photo news factors (and their strength in a particular case) for their daily working routines. Finally, 'external factors − gatekeeping' (c) covered the editors' personal attitudes concerning their personal work environment, as well as the organizational and social structures within the office and the company in general. Editors also assessed the influence of editorial line, time and cost pressures on the photo selection. Data analysis utilized the "qualitative content analysis" procedure described by Mayring (2003), based on a category system which consisted of seven major categories (photo news factors, text base, work processes, knowledge, pictures of the week, external factors − gatekeeping, feedback / para-feedback) and up to five sub-categories.

Recipients

The reader data was also acquired by a combination of empirical methods, with an emphasis on a computer-based experimental survey. Its one-factor design with eight repetitions tested the impact of each of the eight *photo news factors* (independent variables, see Table 1) on a set of dependent measures (recall, evaluation of and emotionalization by the picture, duration of picture viewing, and subsequent interest in the respective article), all subsumed under the construct *intensity of attention*.

We used the five days of observation in the *stern*'s photographic editorial department to identify possible pictures that could be used for an experimental study. This preselection was based on two premises: (1)

Figure 2. *Images representing two different manifestations of the photo news factor "vio-lence/aggression" (weak vs. strong).*
[Source: Hicks et al., 2009: p. 157]

only one photo news factor should be visualized by each pair of images, and (2) each pair of images consisted of one picture displaying the photo news factor strongly while the other picture showed a 'weak' version (see Figure 2 with a sample pair of photographs). A preliminary choice of 32 images (2 pairs of images for each photo news factor) was evaluated with regard to their suitability as an experimental treatment in a large-scale pre-test. To constitute the material for our principal investigation, we finally succeeded in finding eight pairs of sample photographs which actually emphasized one photo news factor each while scoring low on all other factors (see Rössler, Haschke and Marquart, 2010 for details). We were aware of the fact that press photos usually do not consist of a single factor only. However, with reference to the experimental design it was necessary to isolate each factor in order to verify its individual impact.

The final set of pictures was used as stimuli in a computer-aided experimental survey which was conducted with a sample of 202 university students, recruited in March and April 2008 at both the University and the University of Applied Sciences of a German state capital. Sixty percent ($n = 122$) of the subjects participating in the experiment were female and 40 % ($n = 80$) male. The average age of participants was 22 years ($M = 22.18$, $SD = 2.24$) and 96 % were still in apprenticeship.

The assignment of participants to the two experimental groups was randomized. A comparison between the groups did not show any significant differences in the demographic variables or the recorded media use; therefore, differences in responses cannot be attributed to those factors. Both groups were given four pictures with a "strong" representation of photo news factors and likewise four pictures of the "weak" version of the remaining factors. The treatment check confirmed that in seven out of eight cases, the two pictures representing the same photo news factor differed highly significant ($p < .001$) concerning our manipulation (ex-

cept for the factor of *unexpectedness*). In addition, it was confirmed that, according to the perceptions of subjects, each pair of images featured only *one* main factor, so that the effects measured can actually be attributed to the respective single photo news factor.

For scale calibration purposes, two images were shown in the beginning of the photo set which should persuade subjects to exhaust the extreme poles of the scales with their rating. By these extreme depictions it should be ensured that the subjects unconsciously develop a sense of what is a strong and what is a weak version of a photo news factor. In the subsequent analysis of picture evaluation, both calibration images have not been taken into account. After showing the calibration images, all other photos followed in randomized order to prevent a serial position effect (cf. Huber, 2005: p. 153 ff.) and in particular primacy-recency effects for the upcoming measurement of picture recall.

While querying the sociodemographic variables before the experimental procedure served as a warm-up, participants were next given the selection of ten images, including the appropriate captions, as a self-directed computer slideshow. Both the "strong" and the "weak" photo obtained the same caption in order to eliminate the textual influence. *Duration of picture viewing* was recorded for each picture electronically. After clicking through the slideshow, free *recall* of images was measured by asking the participants to describe those three pictures they recollect best from their memory. Subsequently, participants evaluated the pictures with the help of items referring to their interest to read the respective article (*intended reception of the text*), to their cognitive assessment of the photos (*general image evaluation*), and to the emotions that had been triggered while looking at the pictures (*emotionalization*). All item batteries were arranged as a 6-point Likert scale (1: "does not apply at all", 6: "fully applies") with a residual category ("no answer").

The questionnaire closed with a measurement of *issue relevance* which was expected to serve as a major moderating factor within our experimental design. Participants specified how strongly they were interested in a variety of current affairs set out in a list. Here, each photo news factor was represented by one topic at least. For example, the factor *violence/aggression* was addressed by the issue 'Afghanistan war'. It is conceded that the topics under study were not perfectly clear-cut and thus could not necessarily be assigned to one specific factor uniquely. Moreover, the entire construct was measured by one single item each; therefore, the importance of issue relevance for the individual process of photo reception may be underestimated in the results reported below. Further research might call for an improvement of issue relevance operationalization.

At the very end of the survey, a "real-world-measurement" of actual text-reception was carried out. Participants were given the opportunity to take along as many printed articles as they liked. Each article corresponded to one picture they had seen just before; their choice was recorded unobtrusively.

Beyond our experimental study, additional (and more detailed) findings were obtained from comprehensive in-depth interviews with 22 middle-aged *stern*-readers living in the former Western part of Germany. All interviews were conducted in May 2008 and were based on a manual that corresponded with the questions asked in the experimental setting. However, in this case participants were confronted with both pictures from one pair of images (strong *and* weak version of each photo news factor) in order to elicit comparative statements on their perception.

Results

Communicators

Overall our empirical study confirmed the assumption that *stern* picture editors are influenced by photo news factors when choosing press photos for publication (see Rössler, Kersten and Bomhoff, 2011 for details). During the selection process, partly without being aware of or referring to it, they use a catalogue of criteria which resembles the photo news factors. However, editors in different departments vary in their emphasis on particular criteria. The factors *emotions*, *celebrities*, *execution and technique* as well as *unexpectedness* were rated eminently important by the picture editors while the factors *controversy* and *sexuality* seemed rather unimportant (see below).

During the interviews with the *stern* employees, the phrase 'sterniges Bild' ['sterny' picture] was mentioned frequently. Used as a universal label for a newsworthy picture, this concept embraces a combination of different criteria, especially the display of strong emotions, great colors, a surprising situation and prominent persons. On closer inspection, these criteria are nothing but photo news factors as defined above. But *stern* journalists do not reflect on 'sterny' pictures as a result of the application of a formal set of factors; rather, they believe that recognizing a 'sterny' picture is the result of their individual talent or newsroom socialization at the most. The selection of 'sterny' pictures is what considerably distinguishes the *stern* from both daily press and competing news magazines like *Der Spiegel* and *Focus*. Rather than aiming at a neutral illustration of political news coverage, the *stern*'s image selection is more orientated towards vivid pictures, like, for example, *National Geographic* does.

Although *stern* picture editors apply photo news factors in their daily routines, decision-making occurs in the context of other factors, too. Jour-
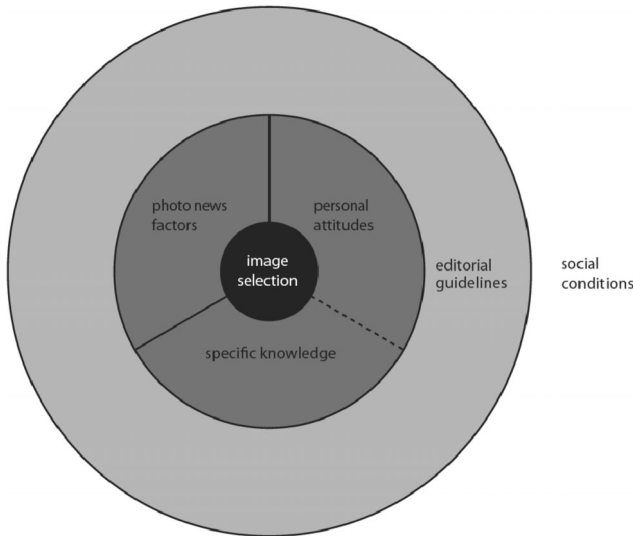
Figure 3. *Factors influencing the journalistic photo selection.*
[Source: authors]

nalists highlight their personal attitudes and knowledge of the topic that has to be illustrated. Accordingly, background knowledge of an issue builds the frame for the picture editor's further investigations: The better an editor is informed about a topic, the more systematic picture research and selection are executed − this includes operational knowledge about databases, image providers and photographers. Picture editors emphasize that they try to keep their personal attitudes in the background while choosing pictures; they claim that controversial issues in particular shall be covered by a balanced presentation. Yet in the aesthetic evaluation of pictures, personal views are of great importance.

The influence of *editorial guidelines* is noticeable and primarily reflected by the structures of the editorial hierarchy. In contrast, the weekly publication frequency of the *stern*, budget matters and editorial expertise represent a comparatively weak influence. A more important factor was identified in form of *social conditions/judicial restrictions* − even if their actual relevance for decision-making is difficult to measure. Picture editors consider norms and values of society and their corporative socialization. Ethical and moral judgments influence the selection process as well, especially with respect to the protection of children and young people and the safeguard of personality and copyrights.

The various factors influencing the image selection on communicators' side can be integrated (see also Weischenberg, Kleinsteuber and Pörksen, 2005) in a layer model (see Figure 3). The image selection process consti-

tutes the explanandum in the inner circle, which is primarily affected by photo news factors on the one hand and individual factors (such as issue-specific knowledge and personal attitudes) on the other. In another layer, editorial guidelines serve as a broader framework for individual decisions, while social conditions constitute a general foil exerting an indirect but noticeable impact. This heuristic model illustrates the journalist's perceptions and the results of our observations in the newsroom of the *stern* magazine. However, we cannot rule out that its emphasis on individual reasoning and photo news factors outperforming the institutional and societal influences may be a peculiarity of the *stern*'s long tradition that expects individual picture editors to take full responsibility for their photo choice.

Recipients

The major finding of the experimental study (see Rössler, Haschke and Marquart, 2010 for details) stresses that a strong representation of a photo news factor in most cases leads to intensified attention of subjects. That means, the duration of picture viewing is longer, pictures are more often recalled and better evaluated, and the viewing of an image with the strong representation of the photo news factor leads to an increased interest in reading the respective article. The more explicit (and possibly more drastic) an event is visually illustrated, the higher is the probability that the reader (1) engages in a photo and (2) becomes activated to get further involved in the coverage (see Table 2).

   Especially those images emphasizing the photo news factors *damage*, *violence/aggression* and, to a lesser extent, *emotions* showed highly significant differences for almost every dependent variable. Furthermore, pictures are always watched more intensively when they succeed to arouse emotions within the viewer. This is especially true if they trigger a negative emotional activation (as in the case of *violence/aggression*, *damage* and *emotions*). The remaining five photo news factors primarily do not induce an emotional activation of the subjects; the photo news factors *celebrities*, *sexuality/eroticism* and *unexpectedness* may even cause a positive emotional activation. As far as the intended and the actual text reception is concerned, participants were more interested in reading the respective article (and even did so) when they saw the image with the 'strong' photo news factor in the case of six of the eight factors.

   However, some results contradicting the assumptions need to be considered. This is especially true for the two pictures representing the photo news factor celebrities: Here the picture with the weak representation of the photo news factor was better evaluated, led to a higher interest in reading the respective article and evoked a stronger emotionalization

Table 2. *Differences between the two versions of a photo news factor, several dependent variables (n = 202).*

	damage		violence/aggression		controversy		celebrities	
	weak	strong	weak	strong	weak	strong	weak	strong
duration of picture viewing[1] significance[2]	11,938 > 13,954 .037*		15,921 < 17,148 .203		11,486 < 11,529 .561		11,156 < 12,649 .121	
recall[3] significance[4]	14 < 51 .000***		28 < 69 .000***		4 > 3 .700		17 = 17 1	
intended reception of the text[5] significance[2]	3,93 < 4,45 .001**		4,25 < 4,84 .000***		1,74 < 1,94 .382		3,79 > 2,94 .000***	
actual reception of the text[5] significance[4]	9 < 26 .002**		33 < 51 .010**		4 < 10 .096		25 > 13 .031*	
evaluation of the picture[5] significance[2][6]	4,41 < 4,94 .000***		4,56 < 5,27 .000***		1,92 < 2,06 .407		4,09 > 3,04 .000***	
positive emotional activation[5] significance[5]	1,18 > 1,1 .031*		1,18 > 1,10 .337		1,40 < 1,43 .708		2,30 > 1,92 .079	
negative emotional activation[5] significance[2]	3,45 < 4,35 .000***		3,49 < 4,61 .000***		1,29 = 1,29 .873		2,02 > 1,53 .000***	
emotional non-activation[5] significance[2]	2,94 > 2,16 .000***		2,72 > 1,94 .000***		4,50 > 4,42 .463		3,60 < 4,20 .003**	

Table 2. *(continued)*

	unexpectedness		emotions		execution and techniqe		sexuality/eroticism	
	weak	strong	weak	strong	weak	strong	weak	strong
duration of picture viewing[1]	10,293 < 10,896		10,804 > 10,321		12,734 < 13,005		7,999 < 10,164	
significance[2]	.171		.846		.672		.003**	
recall[3]	23 > 22		18 < 37		36 < 44		25 < 33	
significance[4]	.866		.003**		.250		.213	
intended reception of the text[5]	2,44 < 2,66		3,92 < 4,02		4,00 > 3,99		2,24 < 2,43	
significance[2]	.307		.674		.758		.224	
actual reception of the text[5]	10 < 18		10 < 28		32 < 41		8 < 10	
significance[4]	.103		.001**		.187		.621	
evaluation of the picture[5]	3,20 < 3,76		4,14 < 4,54		4,21 < 4,62		2,46 < 3,05	
significance[2,6]	.000***		.009**		.008**		.003**	
positive emotional activation[5]	3,00 > 2,04		1,12 > 1,10		1,93 > 1,89		2,59 < 3,10	
significance[2]	.000***		.354		.847		.012*	
negative emotional activation[5]	1,28 < 1,80		3,85 < 4,17		2,04 > 1,93		1,11 < 1,15	
significance[2]	.000***		.056		.420		.504	
emotional non-activation[5]	4,64 > 3,83		2,61 > 2,43		3,57 < 3,75		4,59 > 4,54	
significance[2]	.000***		.357		.352		.705	

[1] measured in seconds / [2] U-Test / [3] $N = 101$ / [4] Chi²-Test / [5] 6-point Likert scale (1: "does not apply at all", 6: "fully applies") / [6] T-Test

(see Table 2). This higher intensity of attention might be explained by looking at the stimulus material used for the factor celebrities. Only the picture with the strong representation displayed a prominent person (Vitali Klitschko as a candidate for the mayoral election in Kiev), whereas the 'weak' version showed an atmospheric 'shot' on a peacefully demonstrating crowd in Kiev. Consequently, the latter was evaluated better in terms of execution and technique, which finally led to an overall higher intensity of attention. Drawing upon this result, it appears that depicting a prominent person does not safeguard viewers' attention. On the contrary, a picture designed interestingly in its photographic means can lead to a higher activation than a photo of a prominent person.

Based on our theoretical considerations we assumed that, beyond the relevance of photo news factors, individual issue relevance would also affect the *intensity of attention* to an image and the subsequent reception of the text. The results suggest a moderate influence of issue relevance on the dependent variables (see Table 3). The most significant correlations emerged − as expected before − between the personal issue relevance and the intended reception of the text (seven out of eight factors). In other words: The more important a topic was perceived by the participants, the higher their interest in the reception of the corresponding article − a finding which unfolded in our in-depth interviews as well. This general outcome which is independent from photographic illustrations comes as no surprise, confirming the earlier results by Knobloch-Westerwick (2007). However, the generally low level of all correlation coefficients (see Table 3) indicates that the quality and form of illustrations, represented here by photo news factors, may play a crucial role as well: Press photos succeed in generating a first activation for the following text reception, although this activation also may be cancelled again because of a lack of interest in the corresponding issue. Nonetheless, to gain a more precise insight, future research should apply multivariate analysis in order to assess the respective influence of photo news factors and issue relevance for the intensity of attention.

Concerning the fourth research question, a final look at the empirical data indicates that the photo news factor *violence/aggression* was most effective in activating the viewers' attention independent from the level of intensity. Successively, the photo news factors *damage* and *execution/technique* have proved to be influential constructs while the factors *emotions* and *celebrities* were less important, followed by *unexpectedness*, *sexuality/eroticism* and *controversy*. This supports the notion that especially high quality press photos showing negative events are able to guide the readers' attention towards a picture and thereupon to stimulate their interest for the associated text (see also Fretwurst, 2008).

Table 3: *Correlation between personal issue relevance and several dependent variables* *(*n = *202).*

	personal issue relevance and …					
	duration of picture viewing	evaluation of the picture	positive emotional activation	negative emotional activation	emotional non-activation	intended reception of the text
damage	.091	.122*	–	.251**	–	.211**
violence/aggression	.104*	.135*	–	.256**	–	.232**
controversy	.023	.040	–	–	.083	.026
celebrities	.051	.277**	.246**	–	.002	.300**
unexpectedness	.050	.099	.033	–	.048	.140**
emotions	.056	.092	–	.153**	–	.220**
execution and technique	.004	.120*	–	–	.063	.147**
sexuality/eroticism	.096	.044	.033	–	.130*	.289**

**$p < .01$ *$p < .05$

Linking results for communicators and recipients

Our results indicate a twofold function of photo news factors: On the communicator's side they are relevant criteria influencing the selection of press photographs for publication. Looking at the audience, it seems evident that photo news factors are a construct well suited to describe the process of selection and the effects of pictures, which, among others, have crucial consequences for the interest in articles. Table 4 merges the results of our two-part study with the eight factors being arranged in order of their importance for both groups. It should be noted that this list does not follow a strict quantitative hierarchy, but covers a spectrum reaching from "very important" to "less important".

In our theoretical model (see Figure 1), the concept of photo news factors serves as a "hinge" between journalists and readers, constituting a vehicle for the inter-transaction between both. However, similarities between the assessments of photo news factors are limited: The closest agreement can be found in the low relevance both groups attribute to the photo news factors *sexuality/eroticism* and *controversy.* These are obviously least relevant for decision-making although in the first case, the influence of *social desirability* during the survey situation and the observation period should not be underestimated. Nevertheless, the communicators' perception suggesting that erotic images became less important in contemporary journalism coincides with the ratings of our readers.

Instead, both groups attribute a certain significance to the photo news factor *execution and technique.* The search of *stern* picture editors for aesthetic photos with high quality seems to correspond with the intensity of attention recipients exhibit when they are confronted with premium

Table 4: *Comparison of the significance of photo news factors for communicators and recipients.*
[Source: authors]

Relevance	Results Communicators	Results Recipients
very *important*	**Emotions** Celebrities **Execution/Technique** Unexpectedness	Violence/Aggression **Execution/Technique** Damage **Emotions**
important	Violence/Aggression Damage	Celebrities Unexpectedness
less *important*	**Sexuality/Eroticism** **Controversy**	**Sexuality/Eroticism** **Controversy**

photo material. To a somewhat lesser degree similarities exist with regard to the photo news factor *emotions*. Obviously, this factor is of high importance for both groups, even if photo editors seem to slightly overestimate its impact on the recipients. The overt relevance of the photo news factors *damage* and *violence/aggression* for recipients' perceptions is not fully reflected in the assessments of the *stern* picture editors although they are still considered to be important. Conversely, the photo news factors *celebrities* and *unexpectedness* play a major role in the decision-making of communicators which is only partially shared by recipients. But the overall logic of the news factors approach is confirmed for visuals across all parts of our study: If a picture displays a stronger representation of a photo news factor, the intensity of attention rises in almost each case.

Discussion

Thus, we may conclude that photo news factors seem to affect both the selection of press photographs by communicators and the level of recipients' interest in visuals. Looking at the history of news value theory (Maier et al., 2010), its extension on the perception of photo journalism is promising. In the broader process of gatekeeping (Shoemaker and Vos, 2009), news factors complement personal attitudes, knowledge of the topic that is to be illustrated and editorial guidelines as criteria for the selection of press photos. In accordance with earlier research highlighting the explanatory power of news factors for audience behavior (Eilders, 1997, 2006; Fretwurst, 2008; Kästner, 2008), our experimental study confirmed the impact of photo news factors within a more complex process of picture magazine use. In particular, they may exert a decisive influence on the interest that and subsequently articles pictures

arouse in the reader. Photo news factors thus are appreciated by readers as indicators of relevance that facilitate the individual decision about picture/text perception − considering the excessive wealth of information and people's limited capacity of attention.

Nevertheless, it must be admitted that a singular study cannot provide sufficient evidence for the concept's impact, especially because the role of individual issue relevance for the selection of press photos is confirmed as well. Future research should take reasonable care of an appropriate operationalization of this construct. We suggest that any improvement should put emphasis on a research design that allows for strict controls on the basis of disjunct issues and mutually exclusive visual stimuli. Hence, it seems reasonable to measure the individual issue relevance via several items. Further investigations need to consider the interaction between photo news factors and the accompanying text; in other words: How do article and pictures contribute to the conjoint effects on the audience? Moreover, we suggest that further research should concentrate on the interaction of several photo news factors in order to prove effects of accumulation, as the text-based news value theory points out. One challenge of those studies would be to find appropriate pictures to ensure the measurement's validity.

However, we understand the present study to be an initial effort to integrate the concept of photo news factors into communication research. Our preliminary results suggest that it may succeed as a construct for explaining the selection and impact of images on both the communicators' and the recipients' side.

Correspondingly, we promote a fundamental paradigm shift on a theoretical level (Kepplinger, 1998: p. 34), moving from traditional news value theory − primarily centered on journalistic selectivity and based on words and texts − to a news value theory for pictures which focuses on communicators and recipients likewise. The dynamic-transactional approach (Früh and Schönbach, 1982; Früh and Wirth, 1992), suggested here as a heuristic to link communicators' and recipients' perspectives, offers a framework for modeling the transactions within and between the distinct spheres of message production and perception. Future scholarly attention should include more thoroughly the dynamic component of the approach: Our experimental study controlled a single occasion of photo assessment, but visual socialization is a long-term process which involves audience learning of criteria such as photo news factors. While communicator studies have always emphasized both the stability and dynamics of news factor catalogues applied over and over again (Kepplinger, 1998), we have little insight into the development of individual press photo perception.

Bionotes

Patrick Rössler is Professor for Communication Science at the Faculty of Philosophy of the University of Erfurt.

Jana Bomhoff is Master Student in Communication Management at the University of Leipzig.

Josef F. Haschke is Master Student in Political Communication at the Heinrich-Heine-University Duesseldorf.

Jan Kersten is Master Student in Political Science at the University of Potsdam.

Rüdiger Müller is a member of the post graduate programme "Communication and Digital Media" at the University of Erfurt.

Picture credits (Figure 2): photographs by Tyler Hicks, published in: Hicks, T., Burns, J. and Fisher, I. (2009). *Histories Are Mirrors: The Path Of Conflict Through Afghanistan And Iraq.* New York: Umbrage Editions.

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