

Semiotics of Pictorial Signs on Social Networking Sites: Remarks on a Neglected Field of Study

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The paper aims at considering characteristics from one field of contemporary visual studies that has for a long time been neglected in academic research: Pictorial signs on Social Network Sites (SNS) are an outstanding class of semiotic resources that is greatly shaped by processes of technological and collective sign production and distribution. A brief examination of the scholarly research on the pragmatics and semiotics of pictorial signs on SNS shows that the heterogeneity of visual signs is often neglected and that it mostly concentrates on one aspect of these pictorial signs: their technological production or their purpose for individual self-disclosure. The paper therefore considers the semiosis of pictorial signs on SNS in a holistic perspective as one the one hand produced by individual and collective meaning making as well as on the other hand a product of technological framing. It therefore develops a techno-semiotic pragmatic account that takes into consideration both processes. Starting from a prominent class of pictorial signs on SNS during Tunisian Revolution, the Tunisian Flag graphics, the paper then shows that communicative and social interaction functions on the graphic interface of SNS ('like'-function, sharing and commenting option) are not only directly inscribed into the pictorial frame, but also greatly influence the reading of a pictorial sign. The location of images on the SNS' interface has an impact on its meaning and on the social functions of a pictorial sign, as profile pictures are directly linked to the online identity of the user. Through technological sign processing, the polysemy of the image is reduced. We therefore consider the images on the one hand as individual self-narratives and on the other as instances of SNS' visual culture that brings out dominant visual codes but also allows social and political movements to spread.

KEYWORDS Internet; Social Networking Sites; visual culture; socio-semiotics; Tunisian Revolution

Introduction

In 2014, American art critic Jerry Saltz published an essay on the history and aesthetics of the selfie.¹ Saltz points out that selfies are characterized by a distinct aesthetic that is greatly influenced by their production and distribution process. Following this argumentation, selfies dispose of a structural autonomy which differs from other already familiar genres, such as photographic portraits and amateur photography. This structural autonomy is not only due to the aesthetic features of selfies – including the subject's arm visible in the photograph or a wide-lens angle on the face – but also to inherent technical features of mobile camera devices and publishing on Social Networking Sites (SNSs).² From a semiotic point of view, therefore, we must ask how those features that are not directly part of the pictorial sign itself might influence the reading of an online picture. Since selfies are not the only category of still photographs published on SNSs, this paper aims to introduce a general semiotic reading of SNSs' still images in order to elaborate a holistic model for their understanding. A review of the research on the pragmatics and semiotics of pictorial signs on SNSs shows that the heterogeneity of visual signs is often neglected and that most attention is paid to only two aspects of these signs: their technological production and their purpose for individual self-disclosure. The paper then opens up a techno-semiotic approach to online still images on SNSs that aims at combining both aspects and introducing the technical features of SNSs to a socio-semiotic reading of the pictures. To give a rather comprehensive insight

into the interrelationships between those levels, the paper firstly tracks the making of a sign, from its creation via the use of image-processing technologies, through its publication on the graphic interfaces of social networks, to its collective shaping, redistribution and negation. This becoming and transformation of visual signs inside the techno-social space of online social networks also determines their semiotic characteristics. With regard to examples of popular still photographs that were widely shared and reproduced during the Tunisian Revolution of 2011, we will revisit the semiosis, narrativity and cultural semiotics of visual signs on SNSs.

Everyday Visual Communication on SNSs

Everyday visual communication on social networking sites is a largely neglected field of study in the humanities, cultural studies, media studies and semiotics. Even though we find studies offering basic introduction to the interweaving of visual communication, media and everyday life that also consider visual signs on the Internet (cf. Manovich 2001; Kress and Van Leeuwen 2006; Mirzoeff 2009; Pink 2012; Lobinger 2012), there is as yet no such textbook on the concrete visual signs on the Internet.

Amid the abundance of specialized publications that deal with the pragmatics and semiotics of visual signs on social networking sites, we can outline two general perspectives: On the one hand, the dominant research focus is on self-representation and self-disclosure through images. These publications consider individual pictures or categories of visual signs on SNSs as a means of social interaction that is based on collective sense-making and interpersonal negotiation of meaning (cf. Döring et al. 2006; Hancock and Toma 2009; Mendelson and Papacharissi 2010). Within this two-handed process between individual self-disclosure and collective affirmation or negotiation lies the question of identity that is often central to these approaches (cf. Balsam 2009; Georges 2009; Nosko et al. 2010; Richard 2010; Authenrieth and Neumann-Braun 2011; Wendt 2014).

On the other hand, a technological-pragmatic dimension of sign processing opens up the perspective to the relationship between SNSs as visual interfaces and collective networks, as well as the production of images through technological devices. These publications consider the forming of a sign and the shaping of its practical use through technological devices (cf. Sonesson 1999; Nightingale 2007; Van Dijck 2008; Lehmuskallio 2009 & 2012). In both perspectives, visual signs are considered as secondary phenomena to visual communication on SNSs. The use of technology to shape the image of the self, as well as the social interaction via visual signs, takes the spotlight here. Therefore, the aforementioned research often focuses on specific genres of visual semiotic resources of SNSs, which are seen as 'typical' for online communication of the self – such as digital photographs or the sub-genre of selfies.

The heterogeneity of visual signs on contemporary online platforms, as a result, has been neglected. First of all, the Internet is – at least in the era of Web 2.0 – conceived as a meta-medium: promoted through the concept of *user generated content*, SNS users simply share any kind of mediated pictorial sign on their SNS profiles and newsfeeds. Hence, visual communication on Facebook, for example, is not limited to genres that appear to be typical for the Internet, but also includes already existing visual signs that were previously common for other media: On SNSs like Facebook, one can find scanned or digitized versions of artistic paintings³ and 1940s' advertisement posters,⁴ information graphics,⁵ caricatures⁶ and journalistic photos from newspapers,⁷ technical visual communication like photos of construction and architectural models,⁸ scientific images,⁹ stills from moving-image formats like cinematic films or television news broadcasts,¹⁰ personal drawings,¹¹ scanned analog family photography and digital amateur photography,¹² as well as mash-ups and collages of the aforementioned images.¹³ Furthermore, these do not even include the possibility of embedding videos from popular online video platforms like Youtube, as well as the various signs of visual communication that are not generated by users but are part of the interface itself.

Given this abundance of visual signs on SNSs, research must not only focus on images whose emergence is attributed to a narrow conception of SNSs' visual culture. As a means of self-disclosure through personalized profile pages on the Internet and of social interaction through a techno-imaginary network of other users (cf. boyd 2010), online SNSs are always, more or less directly linked to the 'offline existence' of an individual, and therefore to the visual media of this offline sphere. It is difficult today to explain the historic specificity and emergence of typical visual signs on SNSs. The aesthetics and production of selfies are revisited in advertisement posters and TV series, and the Internet's popular rage-face comics are transformed into street-art sticker campaigns. In a time of an explosive visual culture and the 'hypervisuality of everyday life in a digitized global culture' (Mirzoeff 2002: 4), images are not essentially linked to only one medium or to one media-related space (offline vs. online).

Furthermore, in addition to the earlier research concerning questions of identity and technological processing, semiotic analysis may also concentrate on the interrelations between the pictorial sign, its processing and reading, the online SNS as a concrete medium that is accompanied by technological and cultural codes of use, and the individual user who is embedded in a networked collective of multiple users. Such an approach allows, on the one hand, a respect for the heterogeneous character of mediated pictorial signs and, on the other, that everyday life's visual communication is not reduced to a matter of mere identity-construction.

A techno-semiotic approach to pictorial signs on SNSs

The present study reconsiders the form of online visual signs in view of their processing through technology and their embedding into online graphic interfaces. Provided that the user's only technological access to the SNS is located on the layer of its graphical interface,¹⁴ technical action on SNSs mainly consists of the interaction with the semiotic contents and elements of this interface. Thus, as danah boyd (2010) states, the interface of an SNS is based upon the interrelations of two networks; on the one hand, an imaginary collective of users which is created through functions of connection¹⁵ and communicational action between users¹⁶ that is a technical feature of the interface. Additionally, this symbolic action establishes, maintains and manages a network of linked computer terminals. Therefore, from a semiotic point of view, we must consider visual signs on SNSs as processed signs – signs that are treated within media as machines of symbolic worldmaking (cf. Winkler 2010: 7). They are technically produced, modified, augmented, and translated. The layers of media technology can thus be conceived as 'process chains through which signs are from station to station constantly transformed [...]'(10). We might then ask in which technological layers the signs are transformed and shaped.

Following Gilewicz and Allard-Huver (2013), an analysis of technologically conveyed signs must take into account their technological embedding. It must therefore also analyze the media-related sign production conditions and 'describe the technical apparatus and the system by which it is produced'. The media-related level of a semiotic resource also leads to the rather pragmatic dimension of the 'process by which it came into being' (219) and how it is enunciated. Both dimensions, the technological, media-related account and the production and distribution of the semiotic resource, have a clear impact on the content and the collective reading of a message.

The concrete production and distribution of online semiotic resources must be considered as a semiotic practice, an individual semiosis, that is performed on the SNS. These practices involve material objects and artifacts – or, regarding sign practices on SNSs, the concrete software and hardware structures of the online interface. Meier and Pentzold (2012) state that multimodal online communication may be seen as an enactment of social practices. To analyze this enactment, one must refer to 'how communicators choose, form, design, and combine signs (based on the social semiotic ideational, interpersonal, textual metafunctions)'(9). A techno-semiotic approach to still photographs on SNSs, then, must not only take into account the chosen images themselves but also the technological performance behind their publication and distribution.

Hence, the technological and practical levels of image analysis must be added to Barthes' (1977) denotative, connotative and linguistic dimensions of semiotic analysis. This means including reflections on the medium's ideological, technological and pragmatic structure in order to understand the meaning of SNSs' still images. This also allows a discovery of the essential differences between them and pictures published in other media, like images in mass media or photographs in private albums.

Picture production and distribution on SNSs

Pictorial signs published and circulating on SNSs originate from different media, both on- and offline. It is a common feature of digital images as discrete signs that they may easily be copied to local hard discs and republished on websites. On SNSs, this can be done by embedding pictorial signs through copying the URL. Sites like Facebook give an automatic view of the picture when the URL is copied into a text box and even encourage users to 'share' visual content from other websites with other network members through a 'share on Facebook' function that is embedded on websites like news sites and other popular media.¹⁷ Those pictorial signs are thus created by other producers, such as professional graphic designers, photographers, scientists, etc., but also by other 'amateur' users for their weblogs, for example. Images that are published in this way through embedding do not differ from their initial form and are not modified.

When it comes to the user producing (his or her own) digital image signs, we can distinguish between two procedures: First, the digitalization of an existing analog image can be done through media technology like digital cameras, scanners or sensors. And second, it can be done through the production of a digital image by means of peripheral media technology that is embedded into terminal technology (webcams or front-facing and rear-facing cameras in smartphones or tablet-PCs) or that can be connected to the hard drives of terminals (external digital cameras). Integrated devices are often directly linked to editing software and publishing features, as is the case with the Instagram app.

The next step in technological image processing is to be found on the layer of the graphical SNS interface. The interface structure of SNSs often provides a rigorous technical code that clearly states which kind of content may be embedded. In the case of images, this often involves restrictions in format and size.¹⁸ The embedding process into the SNS interface is intuitive, with easy browsing of images on the hard disc and even the submission of several images simultaneously.¹⁹ Finally, the embedding of pictorial signs into SNSs' graphic interfaces is highly standardized. Input boxes define the location of signs in the individual user profile and the newsfeed. The most common boxes are the profile picture, which is most commonly situated in the upper left-hand corner, shared and uploaded pictures as 'news' that are embedded into the activity feed underneath, and prepared content boxes for picture albums that are to be found in 'photo' or 'picture' sections.

The user's choice of placement and enhancement of the image with linguistic content - through titles or comments - is, at this stage, a final potential action in the processing of the pictorial sign. The technical transmission of pictorial signs between the stages in the semiotic process chain is heavily programmed. But, image processing on SNSs depends not only on individual content transformation and technological code structures. Once published in the SNS, visual signs are distributed by the network's collective of users.

As with all other content on SNSs, a pictorial post can be commented on by other users, either in textual form or by using the 'like' function.²⁰ This quasi-symbolic technique allows the expression of emotional responses to content.²¹ On the other hand, pictorial signs may be recontextualized via collective action: One can share the pictorial content of another user on his or her content feed (which is similar to sharing external online content and embedding it into the SNS), or embed a link to another user into the picture. The linking function was initially enabled by Facebook to highlight other SNS users who are visually present in photographic pictures, but now also serves to distribute the image by linking a maximum of other SNS users that are not visually present.

With the collective sharing, comments, affirmation and linking of the pictorial sign, visual content may be dissociated from its original producer's profile and become a part of the intersubjective structures of the network. This collective sharing of content as dissociation from individual sign production is an inherent feature of SNSs: Pictures are embedded in other profiles, groups and other sites on the SNS and therefore gain an augmented social visibility. Danah boyd addresses this issue as the scalability of content on SNSs: 'Technology enables broader distribution, either by enhancing who can access the real-time event or widening access to reproductions of the moment' (boyd 2010: 47). Visual content, therefore, may become 'viral' and be processed and spread by a multitude of different users as an infection of large parts of the network.

Processes of collective reception, affirmation, commenting and sharing of visual signs remain engraved as a trace in the sign itself. Hence, the pictorial sign is not limited to its primary frame, which is the boundary between the iconic sign and linguistic and other symbolic content. The secondary frame embraces the picture itself, but also traces of previous interaction through the sign, as may be exemplified in pictorial content posted on the Facebook profile of German newspaper TAZ (cf. Figure 1). Embedding and sharing visual content on the Internet is, therefore, not to be seen as an equivalent to copying digital pictures. If a picture is copied to a local hard disc and redistributed on a SNS, it may be seen as an actual novel sign without the inscription of further reading and commenting. But, a shared image also shows its historical readings which can be traced through the layers that lay outside the iconic level.²²

The production and processing of pictorial signs on SNSs is to be seen as a complex process that is shaped by the use of the graphic interface of SNSs and its technological features, as well as by the collective distribution of the sign. A concrete example of a class of images produced and published on Facebook during the Tunisian Revolution illustrates the consequences.



Figure 1. Collective sign processing on Facebook. Facebook profile of German Newspaper TAZ. <https://de-de.facebook.com/taz.kommune> (Publication date: 31.03.2015) [accessed April 1 2015]

Pictures, Flags and Likes

Between December 2010 and January 2011, Tunisian Facebook users discovered a significant change in the visual sphere of their inter-individual networks on the SNS. During the main period of protest against the repressive politics of dictator Ben Ali, many Tunisians changed their profile photo from an individual (self-)portrait photo or other pop-cultural images to a highly symbolic sign: The Tunisian flag with crescent and star was embedded into the most prominent and self-promoting image slot on the profile page. However, this image did not represent the Tunisian flag in its original representation. Before the president's escape on January

14, 2011, Tunisian Facebook pages were overwhelmed with flags colored black or surrounded by solidarity hands, as shown in Figure 2 taken from a paper by Tunisian researcher Kerim Bouzouita (2011: 156).



Figure 2. Screenshot of Tunisian Facebook user's profile photos in January 2011. Bouzouita (2011, 156)

Bouzouita points out that at this moment in the revolution, Facebook provided one of the only public spaces with free access and potential freedom of expression in contrast to the urban public spaces that were paved with visual representations of the regime's power, and to the mass media that was controlled by Ben Ali's government (148ff., 156). Primarily, this visually 'hacked' representation of the national flag was for many Tunisians the starting point for a revolutionary engagement. The initial symbol of state power was transformed and linked to individual online personae in order to elaborate an alternative political stance (156f). Hence, Bouzouita situates this pictorial practice of bricolage and appropriation of the national symbol as an act of 'semiotic guerilla' (157).

Bouzouita's consideration not only relies on the mere denotative level of those graphic images on Tunisian Facebook. It is also the outcome of a techno-semiotic account that focuses on the pragmatic or practice-related dimension of pictures on SNSs. Under closer scrutiny, this example reveals the inherent specificity of the online still images.

Semiosis and multimodal inscription of user practice

When it comes to understanding the semiosis of pictorial signs on SNSs, the previous description clearly shows that the different content layers of pictures are shaped not only by individual transmission, but also by technological means and collective use, as well as manipulation of the circulating image. The picture appears to consist of different semiotic layers that interact with one another: Beyond the iconic content of the pictorial sign itself, we find linguistic content in titles and comments on the image; there are several techno-symbolic (quasi-automatic and hypertextual) signs, such as the linking of other users and the 'like' function, and we may also recognize the history of the image's circulation throughout the network by analyzing its sharing options. These layers combine traces of the image's reading by other users with the multimodality of the actual sign.



Figure 3. Timeline photo Med Freeman Creations, January 13 2013. <https://www.facebook.com/MedFreemanCreations> [accessed April 1 2015]

As we can see in the example of Tunisian media activist Med Freeman (Figure 3), the prominent flag theme has been widely transformed. The user added a hand symbol to the flag that – together with the added title ‘impunity?’ – accuses the politicians responsible for the deaths of the revolution’s martyrs of having evaded prosecution. Together with the image description underneath, the image calls for a demonstration to fight for the rights of the martyrs’ families. What enhances here the initial denotation of the picture is its’ enhancement through technological features, such as adding a link to the demonstration’s webpage, writing an image description and linking a group of activists directly in the picture. On the other hand, on the distribution side, the picture was ‘liked’ by 16 persons and was shared 19 times.

We can therefore distinguish between a historic-pragmatic level of reading the image and an actual interpretative reading of it, even though both closely interact with one another. Viewing how many users have ‘liked’ or shared pictorial content or reading the user comments on it shapes the reception of the image itself. Likes, shares, and the volume of content not only express the popularity of an author or producer of content (cf. Alby 2007: 112), but also the popularity and predominant importance of any particular visual content. Comments on the image may reveal the ‘hidden’ meaning of the image by contextualizing, framing, or explaining the content. In the example, one user criticizes the pictorial message’s intention by saying that ‘it is

their right [not to be judged]: This extra-content to the picture is partly inscribed into the picture frame and therefore highly visible.

In this perspective, the semiosis of pictorial signs on SNSs must also be analyzed as a process that is shaped by the discrete technologically programmed processing of the sign. Nöth (2009) suggests discussing this technological shaping of the picture as a machine semiosis. Digital processing reduces the Peircean notion of semiosis as a triadic process to a merely dyadic one as quasi-semiosis: The position of the denotation or object of the sign is left out. Semiosis in machines does not require an object of experience (cf. 84f). Therefore, technological sign processing is mostly conceived as a functional treatment. Functions like 'likes' or links do not by themselves play a referring role, they serve first and foremost the inherent network structures of the SNS.²³ And yet, these processes of machine semiosis also reduce the polysemy of the pictorial sign: On the one hand, we can consider this quasi-automatic processing in its symbolic social function, when 'likes,' links or comments on a picture create what boyd calls 'imagined audiences' (boyd 2010: 49) or imagined network collectives. Those imagined collectives serve as addressees to the communicative function of a conveyed picture. In the case of Med Freeman, the author aims his communication at a network of political activists who are directly linked in the picture. On the other hand, the implemented functions have material and pragmatic consequences on pictorial communication by creating real networks of audiences that have access to the picture and can therefore read it. This can be clearly seen when a highly symbolic graphic is used to call for participation in a demonstration, as in the example given.



Figure 4. Profile Picture A. Laabidi, January 11 2011. <https://www.facebook.com/asma.laabidi404> [accessed April 1 2015]

Pictorial narrative and the self in SNSs

Visual communication does not have only a representational function. Kress and van Leeuwen (2006) point out that, particularly in multimodal communication that has a pictorial core, pictorial signs are to be seen as having three metafunctions: Apart from their representational dimension, pictures also have an interactive and a compositional (textual) metafunction. When it comes to the embedding of pictorial signs into the SNS interface and the inscription of user practices, we consider the pictures within the larger framework as a 'modal ensemble' (Kress 2010: 28), a formation that constitutes a larger ensemble of intermodal structures and thus forms a closed text.

The choice of posting the graphic of a transformed Tunisian flag in January 2011 as a profile picture is not only to be seen as an act of mere aesthetic communication. When Facebook user A. Laabidi publishes a picture of a blood-covered Tunisian flag with dripping edges (Figure 4), the symbolic resources of this image become part of her individual self-narrative, telling viewers that she is mourning her beloved country. The picture is an element of her individual one-to-many communication action that is linked to the online-persona and contextualized in the situational anchoring of the user between her online and offline identities. The concrete function of these visual self-narratives depends on their position in the SNS's interface.

A picture that is chosen to be the profile picture is static and directly linked to the identity of the online user. It creates a constant avatar that represents the user's 'face' on the SNS and is thus perceived as a pure self-display. Those pictures are always viewed when the user's profile page is opened. Laabidi therefore designs her online face by choosing the Tunisian flag theme with an emotional and critical connotation. This point is crucial, as the publishing practice of Laabidi shows that she actively chooses the modal option (using a picture instead of a text and publishing the picture as a profile photo) in order to create a message. Pictorial practices on SNSs become a matter of design in the sense of Kress (2004), as a 'choice in context' that asks, 'what, in this environment, with this kind of audience, with these resources that are available for implementing my design, given these social, economic, 'political' constraints, and with my interests now at this moment, is the best way of shaping that which I wish to make, whether as 'message' or as any object (of design)?' (116). The choice of a mode and – on a larger scale – the practice of publishing a picture are therefore part of a rhetorical process that also tells something about the actual context of the picture.

For Tunisian Internet user A. Laabidi, this becomes clear when we consider the characteristics of SNSs as sign stocks of individual representation: A closer look into her profile photo album gives an insight into the diachronic narration structures of the user's profile photos. Until the end of January 2011, Laabidi's profile narrative was highly determined by the presence of the Tunisian flag theme in different pictorial realizations (Figure 5). On the one hand, we can suppose that her national identity and her individual belonging to the state was an important issue at this time, which was shaped by the people's political uprising but also by political uncertainty.

This reading of the pictorial sign as 'being there' can be seen on different levels: In general, every semiotic resource published on SNSs shows that there might be an active user who designs his or her online presence. Pictures are further perceived as a form of increased authentication – visual content must be actively chosen in order to respond to the concrete socio-cultural context of the user. The pictorial content can then reflect in a more or less realistic mode the everyday life environment of the user (cf. Erdmann 2013: 146). Furthermore, the pictorial content may represent the user herself, as another profile photo of Laabidi shows (Figure 6). In this photograph, Laabidi performs a quasi-indexical authentication of self by using photographic technology. Furthermore, she uses the photograph to enact a perfect self-staging that includes highly symbolic signs like the Tunisian flag theme and an emotional gesture towards another friend.



Figure 5. List of profile pictures A. Laabidi, January 2011. <https://www.facebook.com/asma.laabidi404> [accessed April 1 2015]



Figure 6. Timeline photo A. Laabidi, May 20 2012. <https://www.facebook.com/asma.laabidi404> [accessed April 1 2015]

This reflects the interactive meta-function of pictures on SNSs as stated by Kress and van Leeuwen (2006): Self-representational pictorial discourse on SNSs always serves as an authentication as well as an idealization of the self towards another person or a collective as an imagined audience. Both levels of discursive function are no longer inscribed in the picture itself as features of indexical or iconic signs.²⁴ As a reply to the ongoing discussion of the realistic matter in digital photographs, William Mitchell points out that the question of indexicality or non-indexicality is not a feature of the mere 'essence' of a picture. A picture has a realistic function if it is meant to be realistic. The assertive function of pictures depends on the relevance and purpose that are given to them (cf. Mitchell 2007: 245). Or, to put it in semiotic and, more specifically, in Umberto Eco's terms, 'every image is born of a series of successive transcriptions' (Eco 1982: 34).

In this account, we have to situate the semiotic function of pictorial signs on SNSs in the relation between picture and context, which is the presence of an individual network user in light of his or her self-disclosure to the network. When a pictorial sign is perceived as an indexical trace of the depicted SNS user, when it is perceived as an iconic representation based on similar features of an object or person that belongs to the living environment of the user, these attributions are deeply rooted in the perception of semiotic agency on SNSs as a representation of everyday life.

It may appear rather simplistic but, as shown previously, the elementary cognitive conception of SNSs is based on the concept of quasi-authentic self-representation in order to maintain a functioning interaction between users of the network. After all, representation of personal everyday life contexts is the ideological basis of SNSs.²⁵ The relation between pictorial content and individual users' presence has thus to be conceived as a symbolic relationship: Pictures are related to the online persona with respect to the SNS's own conventions of use. These conventions are not an artificial creation of the platform's owners. They are products of collective affirmation or negotiation and thus part of the culture of the SNS.

Networked Culture

Cultural structures of SNS use are created in the interrelations between the technological features of the user-interface on the one hand and the individual and collective sign processing on the other. They are therefore shaped by inherent technological code structures and self-narrations of the SNS and by the secondary cultural context (language, perceptions, meanings, emotional and normative codes) (cf. Banse and Hauser 2010) of its users.²⁶ It is difficult to give a general characterization and definition of these media cultures and their dominant sign practices.²⁷ The dominant pictorial sign structures that are elements of SNS cultures have been described as 'regimes' referring to Foucault (Reichert 2008), as 'transnational pictorial systems' (Müller 2013), or as an autonomous code in terms of a 'new universal visual language' (Manovich and Tifentale 2014).

Pictorial sign regimes cannot be characterized with regard to their stability, rigidity or differentiation. For example, the dominant aesthetics and pragmatics of selfies as described above are today a global phenomenon that has spread across generations and territories. However, the iconic features of selfies are subject to constant changes, for instance, when new peripheral devices are introduced to the initial technical practice of image-making. The selfie stick, as a technological extension of the selfie arm, allows the turning away from self-depiction to taking a collective self-portrait.

The inherent characteristics of social networks play an important role in the generation of dominant visual representation practices. Due to the feature of scalability, the potential for increased visibility of content on SNSs (cf. boyd 2010), visual concepts may spread rapidly from actor to actor within the network and create a 'viral' phenomenon. Representations can become viral with regard to their visual content. This is the case for the Tunisian flag theme which offers visual clichés or 'visiotypes' (cf. Pörksen 1997) that can be assembled into an individual discourse about the self and its political position during the Tunisian Revolution. However, the dominant cultural code of pictorial sign production not only focuses on its visual elements. It may also refer to

the dominant aesthetics of visual resources at a given moment – for example, the predominance of different shades of red in Tunisian graphics from January 2011 on (Figure 5).

These dominant pictorial systems limit the polysemous discourse of pictures to unified categories of representation. What remains, then, of the potential of polysemous discourse as stated by Stuart Hall for negotiating or refusing the ‘dominant cultural orders’ and their ‘dominant or preferred meanings’ (Hall 2001: 57), when the regime of representation is partly engraved into the technological conditions of image production? Reichert’s suggestion is to conceive individual amateur sign processing as a productive action that has the potential to transform technologically shaped sign regimes by appropriating content on SNSs (cf. Reichert 2008: 28). Amateur image production and sharing, therefore, must be located on the thin edge between structures of techno-semiotic power structures and subjective media appropriation. These processes of subjectification largely depend on collective negotiations, not only of sign content, but also of the use of SNSs to transmit, produce and receive pictorial signs. The interrelations between technological interface structures, individual appropriation of pictorial content on SNSs and collective processing of visual signs in the networks can therefore be analyzed as a dialectical structure: They create dominant sign regimes but also imply their transformation. When Kerim Bouzouita (2011) states that the country’s dominant visual order before the fall of Ben Ali’s dictatorship was a representation of the leader and his power, then the use of pictures in the alternative medium of SNSs and the creation of new visual representations may show the emergence of a political counter movement. It is the transformation of sign regimes that covers political symbolic action.²⁸

Conclusion

In reaction to a lack of holistic semiotic approaches to still images on SNSs, the current study suggests that those semiotic resources be tackled in their double semiotic structure: as objects of an inter-individual communication and thus collective process of meaning-making, as well as objects of technological processing. In the first perspective, still images are embedded in collective networks of individual users who produce and reproduce pictorial signs, who comment on their reading of an actual sign and who attribute a group of addressees to it. In the second perspective, pictorial signs are part of a larger technological distribution process which determines the sources, technological contexts and thus the reception of those signs. Both sides interact, when collective readings are reattributed to the pictures and inscribed in their interface frame via comments, likes, links or sharing processes.

We therefore put our focus on the pragmatics of image processing which consist of enacted practices that follow technologically determined communication processes. This means that we can also consider these practices as a means to individual, and – through their contextualization in a collective network of users – social functions: Images on SNSs primarily serve as a means to self-narration as a dominant rhetoric in online social networks. They therefore reflect, on the one hand, the individual everyday life between online or mediated and offline spaces, and, on the other hand, they renew cultural collective patterns and contents. As was seen for the flag graphics of the Tunisian Revolution, a rather individual or self-centered narrative may therefore turn into a socio-political discourse, which (re)creates the public debate of individual belonging and citizenship through visual signs.

The proposed techno-semiotic approach can only provide a somewhat abbreviated account of the semiotic nature of pictorial signs on SNSs. On the one hand, the very complex interaction between the technological graphic interface and its components (like-, sharing-, embedding-, or comment-functions) and the pictorial content may become the object of further analysis. On the other hand, the materiality of the production of digital pictures (with new camera devices or SNS apps that quasi-automatically upload pictures to SNS interfaces) remains an interesting field of semiotic study.

Furthermore, an application of this first account of moving images and their embedding on SNSs may provide interesting insights. For those semiotic resources, the impact of the technological user interface is even stronger. To give one example, Facebook automatically starts videos embedded into a user profile. The video is replayed when the reader views it on his or her screen, but without sound. It remains to be analyzed how automatic screening influences the reading process of the video itself and, furthermore, the reading of the online persona of the user sharing the video. Even more interesting is the Facebook campaign for its 10th anniversary called 'A look back,' where the interface automatically generated a video with the most popular shared photos of an individual user – in order to create a visual history of the highlights of individual Facebook use.²⁹

NOTES

1. Selfies can be defined as photographic self-portraits that are made with a smartphone camera device and are quasi-immediately published on online social networking sites (cf. OD 2015).
2. Most examples cited by Saltz originate from Facebook, Myspace and Twitter.
3. Cf. Facebook Fanpage: 'Louvre Art ____ by Paris' ([https://www.facebook.com/pages/Louvre-Art ____-by-Paris](https://www.facebook.com/pages/Louvre-Art-____-by-Paris) [accessed April 1, 2015]).
4. Cf. Facebook Page of Kalamazoo Retro Posters Inc. (<https://www.facebook.com/kalamazooretroposters> [accessed April 1, 2015]).
5. Cf. Facebook Page 'Pinfographics' (<https://www.facebook.com/pinfographics> [accessed April 1, 2015]).
6. Cf. Facebook Page of Tunisian caricaturist Z (<https://www.facebook.com/pages/DEBATunisie/149229615135091> [accessed April 1, 2015]).
7. Cf. Facebook Page of German Newspaper Süddeutsche Zeitung (<https://www.facebook.com/ihre.sz> [accessed April 1, 2015]).
8. Cf. Facebook Page 'Architecture Models' (<https://www.facebook.com/architecturemodels> [accessed April 1, 2015]).
9. Cf. Facebook Page 'I fucking love Science' (<https://www.facebook.com/IFeakingLoveScience> [accessed April 1, 2015]).
10. Cf. Facebook Group Page 'Film Stills' (<https://www.facebook.com/groups/filmstills> [accessed April 1, 2015]).
11. Cf. uploaded artistic picture on the network for artists Deviantart. (<http://www.deviantart.com/browse/all/traditional/> [accessed April 1, 2015]).
12. Cf. Facebook Group 'Vernacular Photography' (<https://www.facebook.com/groups/vernacularphotography> [accessed April 1, 2015]).
13. Cf. Facebook Group 'Collage' (<https://www.facebook.com/groups/collage.kr> [accessed April 1, 2015]).
14. Friedrich Kittler already states in 1991 that the development of computers and their operation systems tend to narrow the user's access to the code structures of computer-related, technical action. Technological refinement of microchips and the introduction of protected modes at the software level resulted in a closure of hardware and software structures (cf. Kittler 1991). The user only had to deal with the restricted interface of the PC. This may also be claimed for modern Internet data structures: Except for open-source websites, one has less access to the code layers of websites than in times of HTML static websites. Dynamic websites with java scripts, embedded videos and other applications create a dominance of the graphical interface. The interface has power and contains ideology (cf. Chun 2004).
15. This linking of users is often paraphrased with the metaphorical term 'friendship'. Cf. networks such as Facebook, Jappy, Myspace.

16. This is mostly achieved through the individual communication in news or articles which are published on the activity protocols of other users or through the linking by other users in their respective content contributions.
17. Cf. The 'social plugin' functions of Facebook. <https://developers.facebook.com/docs/plugins/share-button> [accessed April 1, 2015].
18. E.g. in Facebook, upload is limited to JPEG, BMP, PNG, GIF or TIFF files under 15 MB, (<https://www.facebook.com/help/167931376599294> [accessed April 1, 2015]), while in the SNS for artists, deviantart.com, size limits are 30 MB and almost every file type is accepted (<http://help.deviantart.com/39/> [accessed April 1, 2015]).
19. For its smartphone app, the SNS Facebook takes it one step further and permits automatic syncing for photos on the mobile phone as well as an automatic enhancement for photos that 'improves the photo's lighting, clarity and shadows' (<https://www.facebook.com/help/118731871603814/>, [accessed April 1, 2015]).
20. The like-button is an essential function of Facebook. In other SNSs, it is replaced with a heart symbol (e.g. VKontakte).
21. But to 'like' content can also mean to express sympathy, (sexual) attraction, empathy, affirmation, or to use it as a marker for communicative turn-taking.
22. For a further reading regarding the complex interactions between iconic sign, collective processing and individual representation in Internet memes, cf. Goriuneva (2013).
23. For further remarks on the semiotic functioning of links and tags on the internet, cf. Huang & Chuang (2009).
24. If they had ever been.
25. Facebook presents its primary purpose as follows: 'Founded in 2004, Facebook's mission is to give people the power to share and make the world more open and connected. People use Facebook to stay connected with friends and family, to discover what's going on in the world, and to share and express what matters to them.' (<https://www.facebook.com/facebook/info> [accessed April 1, 2015]).
26. For further reading on the secondary code of culture and its impact on user behavior and pictorial sign processing on SNSs, cf. Erdmann (2015).
27. In the first instance, this difficulty results from the general close entanglement between media, signs, culture and individual cognition in the sociocultural construction of reality. For further readings from a constructivist point of view, cf. Schmidt (2000).
28. To discover a more elaborate analysis of new forms of visual and symbolic protest on SNSs, see Erdmann (2014).
29. Cf. Facebook's information regarding the 'Look Back' experience (<https://www.facebook.com/help/206982576163229/> [accessed April 1, 2015]).

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