The Selfie: More and Less than a Self-Portrait
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NB: This is the final working draft, submitted to the editor in fall 2016. If you would like to cite this article, please refer to the printed version which has benefited from numerous revisions and edits.

Publication info:

“Every self-portrait, even the simplest and least staged, is the portrait of another.”
Jean-François Chevrier (1986: 9)

The selfie and the networked camera
Since 2013, when the word “selfie” entered the Oxford English Dictionary, it has appeared in controversial news and entertainment articles as well as scholarly texts in a range of disciplines including computer science, social sciences, and psychology. According to the definition by the Oxford Dictionaries (2013), a selfie is “a photograph that one has taken of oneself, typically one taken with a smartphone or webcam and shared via social media.” This definition sums up all three key activities that are essential for the selfie: taking a photographic image of oneself, using a camera on one’s smartphone, and sharing this image on social media.

While Daniel Rubinstein and Katrina Sluis have introduced the concept of networked image already in 2008, I would like to suggest a slightly different term that shifts the focus more toward the apparatus that produces the image: the networked camera. It is an image-making,
image-sharing, and image-viewing device whose necessary features include hardware (smartphone with a built-in camera), cell phone service subscription or wireless Internet connection, online image-sharing platforms (such as Instagram), and the corresponding software. This combination facilitates a streamlined production, circulation, and consumption of all kinds of images, including selfies. Just like the networked camera is more than only a new type of camera, the selfie is more than a new type of self-portrait. Although the selfie is reminiscent of self-portraiture in general and earlier photographic self-portraits in particular, it is more and less than a self-portrait. The concept of the networked camera helps to understand the selfie as a hybrid phenomenon that merges the aesthetics of photographic self-portraiture with the social functions of online communication.

At the time of writing (the fall of 2016), the aesthetic aspect of the selfie has been most widely discussed by computer scientists involved in social media analysis. Such research treats all photos shared on social media in general as an easily accessible data that can be analyzed algorithmically. For example, Hu, Manikonda, and Kambhampati (2014) have detected and analyzed the most popular subjects of photos shared on Instagram. Another team from the field of computational social science have published an analysis of selfies based on data sets containing millions of photos shared on Instagram (Souza et al. 2015).

Meanwhile, social sciences and media studies provide a solid methodological basis for thinking about identity construction and performance of the self through photography shared on social media (see, for example, Papacharissi 2011). An important body of scholarship is collected in the special section of the International Journal of Communication, edited by Theresa M. Senft and Nancy K. Baym in 2015.
Parallel flow of publications puts the selfie in an exclusively negative light, identifying the selfie with a “masturbation of self-image” (Marche 2013) or a “virtual mini-me” (Clark 2013). In another example the author mobilized a wide range of concepts to discredit the selfie: “mainstream corporate selfie culture,” “pathological,” “celebrity-fed stupidity” and “insufferable idiocy” (Giroux 2015). While all opinions contribute to the debate, in this chapter I understand the selfie as a sub-genre of popular photography and offer some considerations about methodological approaches to studying it, leaving moral judgments and psychological diagnoses to experts of those fields.

**More than a self-portrait**

The selfie is more than an image, and more than an image of the self. Apart from the image, other essential attributes of the selfie include metadata, consisting of several layers: automatically generated data (like geo-tags and time stamps), data added by the user (hashtags), and data added by other users (comments and “likes”). The importance of metadata has been addressed by Rubinstein and Sluis (2013), but this element is easily overlooked in the selfie-shaming discourse.

The means of the making of the selfie and conditions of its circulation are equally important elements as the image itself. The instantaneous dissemination of the image via Instagram or other platforms makes the selfie significantly different from its earlier photographic precursors (Rawlings 2013). As Sonja Vivienne and Jean Burgess (2013: 281) have observed, “much more important than digital photography’s influence on the practice of taking photographs, then, are the ways in which the web has changed how and what it means to share photographs” (emphasis in original).
The layers of data that accompany the image can help to study the selfie. Data—time, place, number of likes and comments—is given and thus analyzable with sociological and computer science methods. The implied meanings and cultural functions of each selfie and the genre as such can be worked out only by interpretative methods—for example, from the perspective of history of photography. Ideally, we should come up with a combined methodology that would fit the hybrid nature of the selfie and let us study all its components as per definition with equal attention.

**Less than a self-portrait**

One popular way of looking at selfies is as if they belonged to the same category of images as the famous painted self-portraits of the past. The similarity lies in the fact that both can be described as “images of the self.” But focusing on this one aspect can only lead to sweeping comparisons across cultures, centuries, and media, ignoring the historical specificity of each image and overlooking their radically different social and cultural functions. For example, one author compared selfies with self-portraits by Rembrandt and argued that “The selfie threatens to distract us from what Rembrandt did: looking at ourselves closely, honestly, but compassionately” (Judge 2014). Such comparisons are helpful only as much as they let us notice how different selfies on Instagram are from Renaissance paintings in museums.

First of all, we have to acknowledge all the profound ways in which a smartphone photograph differs from an oil painting on canvas. Furthermore, the selfie is part of popular visual communication, its makers are not limited to a narrow elite of highly skilled artists as it was with painting in Renaissance. The selfie exists within an economy of fleeting, disposable images, unlike Renaissance paintings that were highly valued cultural artifacts. Selfies typically
are made quickly and meant for an equally quick viewing on a smartphone while commuting or on the go, unlike paintings that were made to be revered and to withstand centuries.

Thus the selfie is less than a self-portrait, at least in the traditional art-historical sense. This consideration also cautions against applying the term “selfie” retroactively to photographic self-portraits made before c. 2010. Many self-portraits in history of photography that look seemingly similar to selfies—self-portraits in mirrors, self-portraits made while holding the camera in one’s extended arm etc. But these images are not selfies because they were not “taken with a smartphone or webcam and shared via social media” as per the definition. They are not products of the networked camera. The term “selfie” is not just a shorter version of “self-portrait,” but has its own historically specific meaning.

**Case study—Selfiecity and Selfiecity London**

Notoriety and controversy to the selfie genre comes from a few popular images that are circulating in the news and entertainment outlets, such as celebrity selfies (like Kim Kardashian’s selfies) or morally shocking selfies (like the funeral selfies). Such images easily capture people’s attention and soon become a symbol of the whole phenomenon. Yet they do not necessarily represent the whole genre—rather they are outstanding exceptions. But how to study typical selfies? How to define the genre and its aesthetic conventions? As a case study that attempted to answer such questions, I present research projects *Selfiecity* (2014) and *Selfiecity London* (2015) which analyzed a sample of “regular” selfies as they were shared on Instagram. Research was carried out by *Software Studies Initiative* based in The Graduate Center, City University of New York. The team was led by Lev Manovich and included myself, Dominikus Baur, Jay Chow, Daniel Goddemeyer, Nadav Hochman, Moritz Stefaner, and Mehrdad Yazdani.
Selfiecity combined a humanities perspective with social sciences and computational methods. By offering a comparative reading of selfies from different cities, this project attempted to quantify cultural difference and translate it into concepts that can be measured and calculated by software—such as smile score, degree of head tilt or eye position. The object of study in Selfiecity was a data set of 3,200 selfies shared via Instagram during one week in 2013 from five global cities in all continents: Bangkok, Berlin, Moscow, New York, and Sao Paulo. An additional set of selfies shared on Instagram in central London in September 2015 was analyzed in Selfiecity London, commissioned for the exhibition Big Bang Data (Somerset House, London, December 3, 2015–March 20, 2016).

Starting point of such research is a data set (Figure 1). During the first stage of research, the team downloaded from Instagram API (application programming interface) 656,000 Instagram photos that were shared publicly on Instagram during one week (December 5–11, 2013) and geo-tagged in the central areas of the five cities. From all images, 120,000 photos (20,000 photos per city) were randomly selected for further analysis. From these, after several rounds of manual filtering, 640 images from each city were identified as selfies. This labor-intensive and time-consuming procedure was preferred over searching images by hashtags in order to avoid confusion—hashtags in multiple languages and incoherent use of hashtags (not all selfies are marked with #selfie, and not all images with such hashtag are selfies). Then computational image analysis methods (such as software-driven face recognition and custom-made visualization tools) were applied to create media visualizations, imageplots, and blended video montages. Meanwhile, human researchers provided estimates regarding the gender, age, and mood of people in the images.
Among the most surprising findings was the fact that only 4% of all images shared on Instagram were selfies (Figure 2). The custom made, interactive web application *Selfiexploratory* (Figure 3) invites all visitors of the project’s web site compare selfies from our global data set.
While the findings of *Selfiecity* and *Selfiecity London* are summarized on their respective websites and discussed in greater detail elsewhere (see, for example, Manovich & Tifentale 2015, Tifentale 2015; 2016), this chapter focuses on methodological considerations and difficulties.

Figure 2.

Figure 3.
Gender inequality

In Selfiecity and Selfiecity London, the results of face recognition software were combined with human input, tagging all selfies as “male” or “female.” More selfies were identified as depicting a female subject than a male, “from 1.3 times as many in Bangkok to 1.9 times more in Berlin. Moscow is a strong outlier—here, we have 4.6 times more female than male selfies” (Selfiecity 2014). Age estimates were connected to the gender guesses. The findings showed that the majority of selfies seem to be shared by people in their twenties. In Selfiecity, the youngest group was women in Bangkok (average estimated age 20.3 years) and the oldest—men in New York (26.7 years) (Figure 4). In Selfiecity London, the age estimates ranged from average female age of 23.7 years to average male age of 28 years (Figure 5).

Figure 4.
Computer scientist Mehrdad Yazdani, data analyst of *Selfiecity*, addressed the difficulties of “measuring the ambiguity of a selfie’s gender:” within the results of human researchers’ gender guesses, he discovered a gray area of approximately 5% where these guesses became less confident (Yazdani 2014). Besides, data showed that “the average gender confidence for males is less than those of females” (Yazdani 2014, emphasis in original). Yet, as Elizabeth Losh (2015: 1653) has rightly pointed out, “Categories for transgender, cisgender, and gender queer now being adopted even by commercial social network sites were nowhere to be seen on the *Selfiecity* website. Systems that accommodate more ways to tag images would seem to be essential tools for those studying how gender and sexuality are performed online.”

The demographical picture of the selfie-takers as it was outlined by *Selfiecity* and *Selfiecity London* revealed the limitations of features that can be extracted and analyzed algorithmically. The numerous computer science studies of selfies continue to replicate the
“male/female” gender division (see, for example, Döring, Reifl & Poeschl 2016 and Dhir et al. 2016). Attempts to include multiple gender identities have appeared in the field of social sciences and social media studies (see, for example, Duguay 2016). Studies informed by feminism have contributed to the growing literature about the selfie, although they also tend to replicate the same binary gender identity (see, for example, Guitar and Carmen 2015, Marwick 2015, McRobbie 2015, and Murray 2015).

The majority of selfies in Selfiecity were taken by young women. This finding inserts the selfie in a larger cultural trend of the twentieth century. Amateur and family photography in general has been consciously feminized since the early 1900s. The process started with the marketing of Kodak cameras as devices simple enough for women and children to operate (Nickel 1998). Nancy Martha West has examined how Kodak’s marketing and advertising strategies constructed an image of the “Kodak Girl” in the 1910s and early 1920s—she was the New Woman, independent and single, “whose pretty face and stylish costumes would contextualize photography within contemporaneous discourses on fashion and feminine beauty (…) and whose youthful image would signify the ease, pleasure, and freedom of snapshot photography” (West, 2000: 53). The attractive images of the New Woman in Kodak advertisements served as role models, the camera became a fashion accessory, and snapshot taking—a modern feminine pastime. Can we draw parallels between the “Kodak Girl” of the 1910s and the selfie-makers of the 2010s?

Within the Selfiecity data set, selfies tagged as “female” indeed appeared to create a distinctively “youthful image.” First, the average estimated age of women was lower than men’s in all cities. Second, the estimated age of women in some cities was even below 23.7 years—the estimated median age of all people in the selfies: 20.3 years in Bangkok, 22.3 in Sao Paulo, and
23.3 in Moscow (Figure 4). However, the twenty-something woman who took photographs with her Kodak Brownie in 1913 was in a completely different social and economic position within her society than the twenty-something woman who takes selfies with her iPhone in 2013. The nature and meaning of women’s image-making has changed between 1913 and 2013.

Yet there is an uncanny continuity in the gendered relationships to the camera from the Kodak era throughout the twentieth century into the Instagram era. Instagram selfies, just like the Kodak snapshots, are a product of commodified urban leisure. Smartphones, which often appear in mirror selfies, at times function as fashion accessories, just like Kodak cameras in the 1910s or Zeiss Ikon cameras in the 1950s that all were marketed to female audiences.

From a critical viewpoint, the focus could be on the woman’s passive role as a consumer. Women, and all selfie-takers for that matter (and all other social media users), would be seen as victims of the capitalist acceleration who provide their unpaid labor to raise the stock market value of companies who own Instagram and the like. From a more affirmative viewpoint, emphasis would fall on participation, empowerment, and control over their self-representation that the access to image-making and image-sharing tools provide to women (Lee 2005, Senft 2008). Limits of such empowerment as well as the moment when it turns into entrapment or exploitation, however, still remain to be investigated.

**Smile score and performing the self**

Selfies from all the five cities were ranked according to the “smile score.” This score was the highest in Bangkok (0.68 average smile score) and Sao Paulo (0.64), whereas the lowest smile score was found to be in selfies posted in Moscow (0.53) (*Selfiecity* 2014). Selfies were ranked according to the degree of head tilt, and that ranking was further divided into groups of selfies
identified by face recognition software and human researchers as “female” and “male.” The conclusion was that “women's selfies have more expressive poses; for instance, the average amount of head tilt is 50% higher than for men (12.3° vs. 8.2°). Sao Paulo is most extreme - there, the average head tilt for females is 16.9°” (Selfiecity 2014).

These findings first of all confirmed the hypothesis that there are significant differences among the selfies posted from different cities and that each region has its preferred style of selfies. Second, smiling and striking a pose in front of one’s smartphone camera can be viewed as active performance of the self. It takes place within the limitations of the genre and with a specific audience in mind (person’s Instagram followers). The performative aspect is present not only in front of the camera but also later, while selecting images for sharing and (optionally) editing them either with Instagram’s built-in editing options or other image-editing apps designed for use on a smartphone. Numerous free apps have been made especially for enhancing one’s selfies, like Meitu, BeautyCam, or MomentCam.

Questions about performing the self in social media photography have been asked before the emergence of the selfie (see Koskela 2004, Lee 2005, Russo 2010, Burgess 2009, Lasén & Gómez-Cruz 2009, and Vivienne & Burgess 2013). Such studies typically were based on case studies and/or interviews. This approach provides an in-depth insight into people’s motivation and expectations regarding their image-sharing practices, yet it does not reveal much about the shared images themselves. Aesthetic qualities of the images are rarely discussed in detail, and the publications contain few illustrations. Selfiecity, on the contrary, focused solely on image analysis.
The selfie in its natural habitat

How to approach and understand the selfie as an everyday, social photographic practice that is inseparable from the apparatus of the making and sharing the image? How to historicize and contextualize the selfie as a phenomenon of a particular time period, generation, specific medium and type of communication? One way to find answers points to the analysis of viewing the selfie. The selfies we studied in *Selfiecity* and *Selfiecity London*, initially were viewed by their intended primary audience on Instagram on a handheld device, most typically a smartphone. The few most common screen layouts of Instagram app (as of October 2016) shape the perception of the content.

For example, the “home” screen of Instagram presents the images shared by people whom one follows. Each image takes up the full width of the screen (Figure 6). Scrolling up reveals the caption and assigned hashtags as well as other users’ comments underneath the image, which is followed by next image, and so on. In this flow of images and text, selfies—just like other types of images shared by people one follows—are viewed separately, one by one, but at the same time they are perceived as a part of a sequence. Furthermore, this sequence is unique for each Instagram user because the content of this sequence depends exclusively on which other users one follows. Therefore a person who follows only people who share mostly selfies, will see many selfies on their “home” screen at any given time, while a person who follows a different set of people, perhaps won’t ever see a single selfie.
Other most common view is a “gallery” view which one can access by tapping on a user’s name—it is a grid of thumbnail-size square images (Figure 7). Twelve thumbnails would be the average number of images that fit a single screen when viewed on a smartphone. In this grid view, selfies appear in the context of other content that this particular user has shared.
Finally, there is also a “search” screen. This interface provides searching by keyword within a single parameter at a time (“top,” “people,” “tags,” and “places” are the available options as of October 2016). Search results appear in a grid of twelve thumbnail images per
screen, like in a user’s gallery view. This “search” screen offers a view which is the closest to an edited and curated data set.

In all three views, images appear in chronological order of their posting. Furthermore, the sequence of images on Instagram is live—updates appear on the “home” screen as they are posted by people whom one follows. Interaction from the viewer is welcomed and encouraged—one can activate the heart symbol (“like” the image), post a comment, take and post their own image at any time and so on. Making, sharing, and viewing—activities that were clearly separated in earlier moments in the history of photography—now smoothly converge in a single device. This very significant aspect is lost when images are extracted and removed from their natural environment. We still have to find methods to measure and analyze the specific modes of their viewing.

Notes for future research

One line of further inquiry leads to an in-depth analysis of self-representation in social media using methods informed by gender studies and feminism. Another possible line of inquiry focuses on the performative aspects of photographic self-representation in selfies viewed in the context of history of photography. The question about spectatorship and consumption of selfies is yet another field of further study.

Long before the era of digital photography, art historian Jean-François Chevrier (1986: 9) noted: “We can no longer escape the obvious truth that every identification pre-supposes the mediation of an image and that there is no identity that does not pass through this process of alienation. (…) Every self-portrait, even the simplest and least staged, is the portrait of another.” In photographic self-portraiture in general, “technology not only mediates but produces
subjectivities in the contemporary world” (Jones 2002: 950, emphasis in original). Or, as Van House (2011: 31) has put it, “making, showing, viewing and talking about images are not just how we represent ourselves, but contribute to the ways that we enact ourselves, individually and collectively, and reproduce social formations and norms.” Selfies are not—or not always are—plain mirrors of reality of the contemporary society. They produce a reality of their own. Just as much we can talk about representation, we have to talk about construction.

The selfie as a product of the networked camera and a new sub-genre of popular photography provides a glimpse into a broader field of inquiry about contemporary visual culture. Although we can download, count, calculate, map, plot, and measure images as data units, computational methods alone cannot provide all answers. Every Instagram user’s experience of any given image is completely different. The keywords are fluidity, subjectivity, and interactivity. The cultural and social functions of the selfie are not fixed and universal. They are established each time anew, based on each maker’s relationship with each viewer.

Acknowledgments

This article is based on my experience while working in research projects Selfiecity (2014) and Selfiecity London (2015). Research was led by Lev Manovich and his lab Software Studies Initiative, based in The Graduate Center, City University of New York. Other members of the research team were: Dominikus Baur, Jay Chow, Daniel Goddemeyer, Nadav Hochman, Moritz Stefaner, and Mehrdad Yazdani. I wish to thank Lev Manovich for his generous advice, guidance, and encouragement. I am especially grateful to Hon Sun Lam for supporting and inspiring my work.
References


Further reading


Flusser, V. (2011) *Into the Universe of Technical Images*, Minneapolis: University of Minnesota Press. (Flusser’s theory about the uniqueness of photographic images provides a useful background for thinking about the selfie and other types of photographs circulating in social media.)
Word count

4,911 words.
Biographical note about the author