Strike a Pose
Robot Selfies

Robots don't seem to be vain creatures taking snapshots of themselves. As functional machines, their purpose is to create a picture of the world without dwelling on the pleasures of self-presentation and self-admiration. However, robots have been taking selfies for quite a while. When Gigapan, a robotic camera mount designed to capture pictures of artwork for Google's Art Project, traveled through the world's most famous museums, it took a whole series of selfies by reflecting itself in the galleries' mirrors. Another prominent photogenic robot is NASA's Science Laboratory rover Curiosity. When it landed on Mars, it held its camera at robotic arm's length to take head shots: truly authentic selfies, as they seem.

Robot selfies raise questions about self-reflection and the concepts that are associated with it. Why does a robot take a selfie? What does it mean for a machine to capture and present itself? The first section considers the optical effect of reflection and its contribution to the formation of robotic self-depiction; the second discusses the process of technological transformation and the shift of knowledge constellations that is linked to it. The peculiarity of robot selfies, I argue, lies in their aptitude to mediate between self-reflection and self-transformation. Robot selfies exist both as an effect and an alternative mode of selfie culture. As such, they are a prime site for investigating not only the logics and aesthetics of selfies but also the future potential of digital media culture.

1. Reflection

Pointing to a long and relatively stable photographic tradition of visual composition, Paul Frosh refers to a central trait of spatial positioning in image making, namely the separation of the producer and the produced:

> One key feature of conventional photographic composition that has remained relatively unchanged across the analog-digital divide is the spatial separation between photographed objects and the photographer's body. The depicted scene is produced from a position behind the camera, a position almost always occupied by the photographer and subsequently adopted by the viewer.[1]

However, while this system of positioning has provided a strong force of ordering figures and elements in image space, it has always been open to breaks and fissures. One of these fractures within the pictorial logics of seeing and being seen concerns the optical effect of reflection.

When a camera is positioned in front of reflecting surfaces like windows or mirrors, it suddenly makes itself being seen. As an unexpected result, the recording device is integrated into the picture, thereby destabilizing the supposedly firm separation of displaying and being displayed. While these instances have often been regarded as unwanted mistakes or errors, it is also possible to consider them as reflections of one of the central properties of photography itself—that is, the efficiency to uncover what has previously been overlooked. Pointing to the predominant attributes of photography, Siegfried Kracauer accentuates the medium's affinity to the accidental. Instead of ordering things in a clearly structured compositional manner, photography lends itself to the unexpected and unplanned. Kracauer emphasizes:

> Photography tends to stress the fortuitous. Random events are the very meat of snapshots. […] In portraiture, by the same token, even the most typical portraits must retain an accidental character—as if they were plucked en route and still quivered with crude existence. This affinity for the adventi-

1 Paul Frosh, "The Gestural Image. The Selfie, Photographic Theory, and Kinesthetic Sociability", International Journal of Communication 9 (2015), 1611, http://ijoc.org/index.php/ijoc/article/view/3146/1388.

> tious again implies that the medium does not favour pictures which seem to be forced into an "obvious compositional pattern."[2]

Continuing this line of thought, Kracauer identifies the main quality of photography as the ability to "include things unknown to their maker, things which he himself must discover in them. […] The aesthetic value of photographs would in a measure seem to be a function of their explorative powers".[3] Photography, according to Kracauer, allows for capturing constellations that do not seem readily apparent. Hence, photos not only produce technological forms of depiction and delineation but also provide us with a perspective on mutable modes of perception.

Photography, which was developed within the framework of analog media, still proves to be an effective notion for wider discussion as a medium of explorative capacities and capabilities, especially with respect to the field of digital selfie culture. Emphasizing the increasing ubiquity of digital photography, Paul Frosh underlines:

> The selfie is the progeny of digital networks. Its distinctiveness from older forms of self-depiction seems to derive from nonrepresentational changes: innovations in distribution, storage, and metadata that are not directly concerned with the production or aesthetic design of images.[4]

Digital media provide new channels of distribution and dissemination of visual information. Hence selfies are closely connected to image sharing practices that rely on network systems and online communication. In this respect, selfies are always data-driven. According to Alise Tifentale, it is this correlation that differentiates the selfie from the photographic self-portrait in the traditional sense:

> Although the selfie is reminiscent of traditional photographic selfportraiture, its other essential attributes 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). Another, no less important attribute of the selfie is the instantaneous dis-

2 Siegfried Kracauer, *Theory of Film. The Redemption of Physical Reality* (Princeton, NJ: Princeton University Press, 1997), 22.

3 Ibid., 19.

4 Frosh, "The Gestural Image", 1607.

> semination of the image via Instagram or similar social networks that makes the selfie significantly different from its earlier photographic precursors.[5]

However, while these transformations seem to be clearly oriented toward medial proficiency and efficiency, they still make room for the unforeseen and unexpected—like the peculiar phenomenon of the robot selfie, which, in the first place, can be understood as an unforeseen form of visual reflection. Gigapan, Google's photographic robot, will serve as a comprehensive example.

Gigapan is a robotic camera mount that is used for Google Art Project. Its purpose is to capture gigapixel pictures as a way of providing virtual tours of the world's most famous museums. The technology behind Google Art Project, which was designed to document the interior equivalent of a Google Street View panorama, is constructed in a way that allows the recording apparatus to move autonomously through the galleries. Significantly, the camera robot is of human height, enabling it to take pictures at eye level and thereby permitting it to explore the exhibits as authentically as possible, meaning to simulate a human perspective. In addition to this claim for accuracy, Gigapan is draped in silvery cloth to prevent possible reflections of the robot's metal surface while taking pictures.

However, this precautionary measure proves not as effective as it is meant to be. In a blog called "The Camera in the Mirror,"[6] artist Mario Santamaria has compiled a collection of pictures where Gigapan catches glimpses of itself in museum mirrors, resulting in a series of bizarre robotic self-portraits (see Fig. 7).

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5 Alise Tifentale, 2016. "The Networked Camera at Work. Why Every Self-Portrait Is Not a Selfie, but Every Selfie Is a Photograph," In *Riga Photography Biennial*, ed. Santa Mičule, (Riga: Riga Photography Biennial, 2016), 76.

6 See Mario Santamaria's Tumblr account: http://the-camera-in-the-mirror.tumblr.com/ (accessed September 16, 2016).

Fig. 7: Mirror reflection of Gigapan (Google 2014)

What do these images signify? Do they evidence the robot's idle idiosyncrasy? In the first place, it should be noted, Gigapan's selfies come into being as a kind of machinic malfunction. Considering for Supposing that Google's technological system was constructed in order to represent without being represented, the sudden visibility of the robotic device is nothing but an error. Seen in this way, reflection comes to stand for confusion. While Google's engineers were certainly aware of the fact that the robot is prone to visual reflection and thus carefully designed an antireflecting cover to exclude that optical effect, they considered the problem from the vantage point of the object of photography—and not, as in the case of Gigapan's selfies, from the perspective of the photographing subject. Thus, the disposition of the machine-made viewing configuration exposes itself to be unstable. It does not exist as a clear-cut system of controlled and controllable knowledge but is in itself movable and modifiable.

As an unexpected result of technological arrangements and visual formations, the emergence of Gigapan's selfies can be understood as a prefiguement of new knowledge constellations. Commenting on his concept of a poetology of knowledge, Joseph Vogl outlines

> a perspective in which the emergence of new objects and areas of knowledge can be linked to the modes of their representation. A poetology of knowledge assumes that each order of knowledge produces specific possibilities of representation. It assumes that within each knowledge order, specific techniques are at work—techniques that determine the possibility and the vis-

> ibility of objects. […] Thus, objects of knowledge do not simply occur as the preexisting and stable referents of statements.[7]

Robot selfies are part of machine-made viewing configurations and likewise technological self-portraits. Significantly, they do not emerge from rigid knowledge constructions but develop in moments of dysfunction and disturbance. Their visibility is closely linked to flaws and errors that give rise to new machinic aesthetics. Only by these divergences and irritations can something be revealed that lies far beyond the borders of a stable knowledge system.

In this respect, the unexpected emergence of Gigapan's self-portraits can be understood as an operational logic that does not proceed predeterminedly but evolves experimentally. As Lorenz Engell has pointed out, the experiment is characterized by fundamental uncertainty. Instability and incertitude are the actual conditions of the experiment and the very foundation that allows the production of something new. Engell underlines:

> The experiment and the experimental thinking never really know what they don't know. Knowing and not knowing are, in this case, not organized in a dichotomic mutual exclusion. The operative question, the actual determination of the unknown and the uncertain, is often unknowingly installed within the experiment's setup, course and process.[8]

Transferring this constellation of knowing and not knowing to Google's Gigapan technology, it can be assumed that the system is able to produce something new in the precise moment when it disregards its intentional control and therefore allows the unintended to come into being. This process would no longer be linked to individual intentions like the developers' or programmers' objectives but would occur as a side effect resulting from the arrangement's susceptibility to flaws and errors.

Robot selfies are processes and products of what Hans-Jörg Rheinberger calls an experimental system, defining it as "a basic unit of experimental activity combining local, technical, instrumental, institutional, social, and epis-

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7 Joseph Vogl and Alwin Franke, "The Shamefacedness of Functional Elements. A Conversation with Joseph Vogl," *New York Magazine of Contemporary Art and Theory* 1.5 (2015), Accessed October 2015, http://www.ny-magazine.org/issues.html.

8 Lorenz Engell, "Fernsehen mit Unbekannten. Überlegungen zur experimentellen Television," In Fernsehexperimente. Stationen eines Mediums, ed. Michael Grisko and Stefan Münker (Berlin: Kadmos, 2009), 16; transl. L.G.

temic aspects".[9] Moreover, they are bound to knowledge constellations being constituted by the media dispositif that enables their formation—that is, they are not an additive element but a generative principle. As such they not only comprise instrument-based technical objects but also allow for the evolution of new insights and new understandings of what it means to be in pictures. Considering the constituents and constellations of the dispositif and addressing the emergence of the new, Gilles Deleuze mentions

> a change in orientation which turns away one's interest in the Eternal and towards the new. The new is not supposed to mean the same as the fashionable but, on the contrary, the variable creativity which arises out of social apparatuses [dispositifs]. […] Each apparatus is thus defined in terms of its newness content and its creativity content, this marking at the same time its ability to transform itself, or indeed to break down in favour of a future apparatus.[10]

Robot selfies can be understood as both relying on existing structures of a media dispositif and having the capacity to transform it to constitute a possible future apparatus. As we move into the digital domain, new modes of perception alter our way of seeing the world, such as being able to go on a virtual tour through museums as Google's Art Project offers, for example. As this transformation transgresses boundaries between human and machine, the robot selfie seems to be most appropriate to embody that change. Could it be that robot selfies point to the constitution of a new kind of digital subjectivity—one that is no longer bound to human command and control but emerges as machine image in its own right?

As we have seen, a first body of robot selfies can be ascribed to an unexpected error, meaning that a machine defies its programming by not only displaying the objects it is supposed to capture but also revealing itself.[11] Giga-

9 Hans-Jörg Rheinberger, *Toward a History of Epistemic Things. Synthesizing Proteins in the Test Tube* (Stanford, CA: Stanford University Press, 1996), 238.

10 Gilles Deleuze, "What Is a Dispositif?," In *Michel Foucault, Philosopher*, ed. Timothy J. Armstrong (New York, NY: Routledge 1992), 163–164.

11 Further examples for this unit of robot selfies include two recent image series reflecting on the relation between machines and photographic selfexposure. In 2016, Spanish artist Daniel Armengol Altayó designed an art project titled "#artificialselfie." It was exhibited at London's Aram Gallery and displayed a robot in front of a mirror provided with a smartphone. The robot was programmed to take its selfies and post them on Instagram repeatedly. Although the machine did exactly what it was deter-

pan's self-depictions can be defined as robot selfies because they are pictures that show the machinic self and have been recorded by nobody but the machine itself. Although these images are conditioned by the workaround of a reflecting surface, other instances of robot selfies imply a structural change to this disposition. Bit by bit, robots seem to detach themselves from accidental selfies enabled by a mirror and move on to image constellations that are more than casual flaws.

2. Transformation

Some of the most popular robot selfies come from outer space. When Curiosity, a robotic rover designed as part of NASA's Mars Science Laboratory mission, was sent to Mars to explore the red planet, it sent some amazing self-portraits back to earth (see Fig. 8). Curiosity's main purpose is to investigate the Martian geology, including climate studies and observations of the mineralogical composition of the planet's surface. However, while being on its mission and following its scientific objectives, Curiosity has not only been gazing at Mars but also, and quite extensively so, at itself. Notably, the image's composition implies that the picture was taken by the robot's arm pointing to the robot's head—a selfie par excellence, as it seems. Although this may look like an amusing accident or just a casual by-product of Curiosity's overall goal-oriented work, there is actually more to that picture. This concerns, above all, the photograph's distribution and circulation—since in fact the ma-

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mined to execute, the unexpected error in this case turned out to be humans—that is, gallery visitors who happened to walk by and thus got into the pictures unintentionally (see http://www.architecturaldigest.com/story/robot-takesbetter-selfies-than-you-do). Another variation of the machinic self-portrait could be explored through drone selfies. As part of a larger art concept having been developed in 2014, the art collective IOCOSE displayed a photographic series of drones taking selfies by flying in front of a mirror (see http://www.iocose.org/works/in_times_of_peace.html). Significantly, these images differ from what has come to be known as a dronie (i.e., a selfie of humans shot via drone). Here the machines cease to serve the instrumental purpose of taking snapshots of people who want to avoid extending their arms or using a selfie stick. On the contrary, these drones "are definitely presenting their own images, taking photos to create and promote their public image," as IOCOSE stated in an interview (see https://creators.vice.com/en_us/article/now-even-drones-are-taking-selfies). I am grateful to Julia Eckel for bringing these instances to my attention.

chine not only captured a snapshot of itself but also spread it via social media, announcing it as a selfie and asking for response and comments.

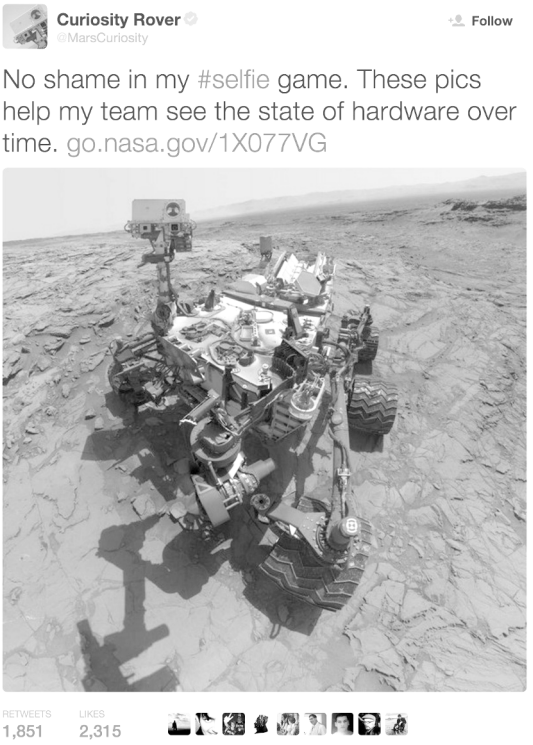

Fig. 8: Selfie of Curiosity sent to earth and shared on Twitter (2015)

Curiosity has its own Twitter account where it operates as @MarsCuriosity. Since its landing on the platform, the robot has posted over 3000 tweets, including the following from February 7, 2013: "How do I take selfies on Mars? By taking multiple pics w/ a camera at the end of my arm. Here's how it's done: http://go.nasa.gov/UHonU2"[12]. When following the link, Curiosity's self-staging is taken one step further, leading to a video that shows

12 Twitter.com (@MarsCuriosity), "How Do I Take Selfies on Mars? By Taking Multiple Pics w/ a Camera at the End of My Arm. Here's How It's Done: http://go.nasa.gov/UHonU2,"

an animation of the rover's arm movements for taking a self-portrait (see NASA Jet Propulsion Laboratory 2012).[13] It seems that some of the comments Curiosity got for its postings were reproaches, decrying the machine's narcissistic vanity rituals and articulating annoyance due to its multitudinous poses—however, the robot found the right way to answer critics by this tweet from October 13, 2015: "No shame in my #selfie game. These pics help my team see the state of hardware over time. http://go.nasa.gov/1X077VG"[14] (see Fig. 8).

Curiosity's tweet is evocative because, instead of sounding like a mere justification, it is actually a hint at the robotic selfie's underlying function. Just as human selfies have a lot to say about transformation, just as they tell us how our bodies and facial expressions change over time, robot selfies may be instrumental in providing information about the machine's modification and possible reactions to that alteration. Oliver Bendel underlines:

> Transformation will also likely become a key trait in robots. […] In a world where a robot may have to be small one day and tall the other, fast at one hour and slow at the next, or ugly in one second and pretty in the next, a selfie will allow a robot to remember who it is, whom it encountered with this appearance and what it did under this cover. Selfies will show a robot how old it has become, how much it has changed, and they will help it maintain its identity.[15]

February 7, 2013, Accessed March 20, 2017, https://twitter.com/MarsCuriosity/status/299698751415652352.

13 NASA Jet Propulsion Laboratory, "Animation of Curiosity Rover's Arm Movements for Taking a Self-Portrait," December 12, 2012. Accessed September 16, 2016, http://www.jpl.nasa.gov/video/details.php?id=1171#fragment-1. Following discussions revolving around how Curiosity takes selfies without getting its robotic arm in the picture, the Mars rover sent out another tweet on February 2015: "Selfie stick not required. How I take self-portraits + why my arm isn't in the shot http://youtu.be/b2rwWECbEHg?t=2m45s". See Twitter.com (@MarsCuriosity), "Selfie Stick Not Required. How I Take Self-portraits + Why My Arm Isn't in the Shot. http://youtu.be/b2rwWECbEHg?t=2m45s," February 24, 2015b. Accessed March 20, 2017. https://twitter.com/marscuriosity/status/570338044210847747?lang=de.

14 Twitter.com (@MarsCuriosity), "No Shame in My #selfie game. These Pics Help My Team See the State of Hardware Over Time. http://go.nasa.gov/1X077VG," October 13, 2015a, Accessed March 20, 2017. https://twitter.com/marscuriosity/status/653998124642406400.

15 Oliver Bendel, "Robot Selfies, and the Road to Self-recognition," June 9, 2014, Accessed September 16, 2016, http://robohub.org/robot-selfiesand-the-road-to-self-recognition.

The way Curiosity communicates its selfies demonstrates a significant change in image circulation. Robot selfies, it becomes clear, are not all about self-love and self-admiration. Furthermore, they point to the digital quality of the image: its programmability and processability. Digital images are always ready for analysis and evaluation. Their purpose is not only to depict and illustrate certain characters (be they humans or machines) but moreover to interpret the given information and to adjust it to the system. As such, the digital selfie is deeply intertwined with algorithmic structures, changing not only the way we represent ourselves but also the way we perceive an image per se. Referring to this fundamental change in digital image culture, William Uricchio asserts:

> The digital turn, and with it, increased use of location-aware technologies, has yielded innovative image applications and posed new questions about the status and value of the image. These applications rely on algorithmically defined relations between the viewing subject and the world viewed, offering robust alternatives to the visual economies of the past.[16]

Similarly, Eivind Røssaak has emphasized that "the machinic ground of the image (codes and algorithms) has become a reservoir for a plurality of expressions".[17] A profound transformation has taken place that increases technological possibilities of image modification and circulation. The digital image "is connected to a new technical matrix, an algorithmic culture, which interrupts the image not to analyse it in its unique singularity but to give birth to a potential multiplicity which is always more than one—and ready to change".[18] In this regard, algorithmically enhanced images are inextricably intertwined with agile and swiftly oscillating dynamics, indicating a wide array of further processing and further retransmission of data.

Although neither Uricchio nor Røssaak mention the specific potential of robots in this context, it seems useful to be reminded of a much earlier approach that discusses the constitutive participation of technology in experiencing and exploring the world through photographic means. In his essay "Towards a Philosophy of Photography," Vilém Flusser proclaims:

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16 William Uricchio, "The Algorithmic Turn: Photosynth, Augmented Reality and the Changing Implications of the Image," *Visual Studies* 26 (1) (2011): 25.

17 Eiving Røssaak, "Algorithmic Culture: Beyond the Photo/Film Divide," In *Between Stillness and Motion. Film, Photography, Algorithms*, ed. Eivind Røssaak (Amsterdam: Amsterdam University Press 2011), 194.

18 Ibid., 201.

> To be in the photographic universe means to experience, to know and to evaluate the world as a function of photographs. Every single experience, every single bit of knowledge, every value can be reduced to individually known and evaluated photographs. And every single action can be analyzed through the individual photos taken as models. This type of existence, then, in which everything experienced, known and evaluated can be reduced to punctuated elements (into "bits"), is already familiar: It is the world of robots. The photographic universe and all apparatus-based universes robotize the human being and society.[19]

Although we have to concede that Flusser's essay was published in the 1980s and that he deals with the idea of robots only briefly, his remarks of the function of automatically processed images are still illuminative because they divert the function of photographs from the intention of a single individual and redirect our attention to the logics of robotization. Getting back to Curiosity's selfies, we might transfer this idea to the purpose of robotic photographs: What is the function of a rover taking pictures on Mars? At first glance, the answer seems to be clear: These pictures serve the engineers on earth who want to check the conditions of the robot's shell, devices, and instruments. Additionally, the reflections on Curiosity's metal surface may tell them something about the Martian atmosphere; in addition, the imprints on the ground could provide information about the planet's soil, state, and mineral composition.[20] However, at a second glance, it is also possible to concentrate solely on the robot's profits, which may exist independently from the scientist's concerns and benefits. In this regard, by using photographic technology, Curiosity could gain knowledge about its location using the pictures it generated. It could, for example, as Oliver Bendel has pointed out, [21] use this information to optimize its movements, including the realization of danger behind or in front of itself.

At this point, our considerations of the function of a robotic photograph are still close to the purpose of the Mars mission—at least if we consider Curiosity to be a rover (i.e., a functional vehicle) and not a self-directed robot (i.e., an autonomous android). However, as Donna Haraway has notably pointed out, advancements in robot technology proved early on that the

19 Vilém Flusser, *Towards a Philosophy of Photography* (London: Reaktion Books, 1983), 70.

20 Bendel, "Robot Selfies, and the Road to Self-recognition".

21 Oliver Bendel "Roboselfies. Telepolis," February 1, 2015. Accessed March 23, 2016. https://www.heise.de/tp/features/Roboselfies-3369411.html.

sharp distinction between functional machines and humanlike organisms has already collapsed. Haraway emphasizes:

> Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert.[22]

Taking into account the fact that Haraway's manifesto, just like Flusser's essay, dates from the 1980s, her stance on the "disturbingly lively" machines appears even more plausible today, given that current algorithmic culture allows for considerable advancements in the development of intelligent robots. Let's assume for a moment that Curiosity is less a vehicle and more a humanoid robot that moves and learns autonomously: How could it benefit from its selfies? Quite clearly, its self-representations could lead to more self-esteem and even self-awareness. The robot could reflect on its looks and gestures and by doing so optimize its behavior.[23] Additionally, by comparing these expressions to human faces, it could enhance the credibility of its outer appearance and continuously extend the potential of its expressions.

It seems, however, that planet Mars does not provide ideal conditions to do so—unless Curiosity communicates with Martians. Still, down on earth, there are robots interacting with humans and obtaining feedback via selfies. Recently, for example, a friendly robot called Hitchbot caught international attention while hitchhiking across Canada and Europe (Fig. 9).

Hitchbot was created by a team of roboticists from Ryerson University and McMaster University in Canada in 2014. The robot has some anthropomorphic features, such as two flexible arms and two legs. Additionally, the robot's head is composed of a screen that displays two eyes and a mouth, making the robot appear approximately human by presenting basic facial expressions. Designed to be a robotic travel companion, Hitchbot is able to talk about simple facts and carry on limited conversations—some face to face and some via social media. It is equipped with speech recognition software, a GPS device to track its location, and a camera taking pictures periodically to document its travels and to communicate via social media platforms.

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22 Donna J. Haraway, "A Cyborg Manifesto" [1985], *In Readings of the Philosophy of Technology*, ed. David M. Kaplan (Lanham, MD: Rowman & Littlefield, 2004), 163.

23 Bendel, "Robot Selfies, and the Road to Self-recognition".

Fig. 9: Hitchhiking Robot Hitchbot (Twitter 2015)

Hitchbot was designed as part of an experimental project. Its main goal, according to the scientists involved, is to gain knowledge about human-robot interaction in addition to digital communication and to ignite a debate about the relationship between man and machine, society and technology. However, returning to our considerations of experimental systems in the first part of this chapter, Hitchbot's contribution to the experiment's disposition may result in a finding that exists independently of the scientists' intentions. Perhaps robots already communicate in ways we can no longer observe or interpret. Regarding Hitchbot, at least, it didn't take very long until the robot realized that the most promising form of facial expression for a selfie to share via social media is a smile. Possibly the machine also learned that these selfies are a proof of its existence: I take a selfie, therefore I am.

Although the way Hitchbot acts and appears is quite rudimentary, we could still think of much more sophisticated forms of social robots, such as health care or therapy robots that become increasingly important, or even sex

robots that develop specific sensor abilities. It might be the case that this process has to do a lot with selfies. At least Gigapan, the robot we encountered in the first part of this chapter, seems to express some awareness for this context (see Fig. 10).

Fig. 10: Gigapan with and without its coat (Google 2014)

The difference between these two images is very telling. Surrounded by bare human bodies, Gigapan got rid of its silvery coat to appear as a naked body amid other naked bodies. Maybe this is nothing but a flaw. However, we could also assume that this instance points to the system's possible optimization, indicating a potential enhancement of robotic self-awareness and self-recognition. Robot selfies exemplify a medial reflection exploring the consequences of a transformation of both visual technology and knowledge formation. This process, we can conclude, involves not only questions of machinic

sensibilities but also, and even more so, an enhanced understanding of the form and function of the selfie as an epistemic technique.