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Probably not a game: Playing with the AI in the ritual of taking pictures on the mobile phone

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Abstract

This research explores mediated ritual interactions in the form of pictures taken using a mobile device in tandem with two critical designs: *Probably Not* and *World to GIF*. We take our point of departure in Rich Ling's understanding of mobile interaction as a ritual of social cohesion and social bonding to explore sociotechnical interactions with mobile technology. By means of playful critical interaction design methods, we explore how deviance from the ritual of mediated interaction through taking pictures on the mobile phone may enhance our understanding of artificial agents. Building upon Ling's work, we mobilize the ritual aspect of mobile communication to open possibilities for imagining alternatives of seeing the world through artificial intelligence. We conclude by arguing that playful designs in mobile communication research may allow us to disassemble and reassemble mobile apps which enables critical reflection on the role of artificial agents in mobile rituals.

Keywords

Apps, critical design, mobile ritual, mobile visualities, play

Have you ever been in doubt of what the things around you are NOT? With *Probably Not*, you won't have that problem anymore thanks to the power of Artificial Intelligence.

(Probably Not at App Store¹)

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Mobile communication has undergone dramatic developments moving from interpersonal dyadic messages and calls to a plethora of functions through apps and smartphones starting in about 2007 (Ling et al., 2020). Being constantly online and connected lead to new social expectations and ritual forms of interactions via mobile communication (Ling, 2012). We constantly share images, videos, text, and metadata (such as geolocation) from the world that surrounds us. With the inbuilt mobile camera, the taking and sharing of images through social networking sites and other apps have become a ritualized part of everyday human interaction (Ling and Li, 2020). We take pictures of the self, the life, the world, and everything, with the mobile phone camera always in our pocket and at our fingertips. Mobile photography and image sharing are a part of our mundane interactions but also beyond entering the political and the extraordinary (Neumayer, 2020). New visual forms such as memes, GIFs, and selfies have accompanied these developments. The practice of taking and sharing pictures on the personal mobile device is interwoven in visualities and socialities as we move around and navigate the world (Hjorth and Pink, 2014). Mobile media and communication research has paid attention to the societal impact of mobile technology on every sphere of our lives ranging from business, politics, education, entertainment to everyday interactions, investigating the consequences on an individual, group-, organization-, and societal level (see Ling et al., 2020, for an overview). This research allows us to understand how mobile technology is structured into every facet of our interactions (Ling, 2012). Yet, with the personal device always accompanying us as we move through the world which we constantly document through taking and sharing pictures via the inbuilt camera and various apps, we also interact with the technology itself.

In this research, we shift our focus to the agency of software and artificial intelligence (AI) to understand the role they play in the ritual of taking pictures on the mobile phone. We explore interactions with artificial agents in such rituals in tandem with two critical designs: *Probably Not*² and *World to Gif*.³ The two apps break with the visualities and socialities we usually associate with mobile technology and place-making (Hill et al., 2021; Hjorth and Pink, 2014). Instead of introducing accuracy, authenticity, and placement (characteristics of mobile photography, see Ling and Li, 2020), we use critical interaction design methods (Bardzell et al., 2018) to explore how deviance from the ritual of mediated interaction through taking pictures on the mobile phone may enhance interactions with artificial agents. The apps challenge our understanding of the world as it is through taking pictures on the mobile phone and shift our focus to the materiality of those technologies (Dourish, 2017; Gillespie et al., 2014).

Theoretically, this research takes its point of departure in Rich Ling's (2004, 2008, 2012) understanding of mobile interaction as a ritual of social cohesion and social bonding, to critically explore sociotechnical interactions with and through mobile technology. We argue that rituals of social interaction in today's mobile communication are also taking place with artificial agents. Building upon Ling's work, we mobilize the ritual aspect of mobile communication in critical design research to open possibilities for innovative and playful mobile interaction design. Our designs build on such rituals of mobile interaction to disassemble and then reassemble them by changing the interaction taking place with the image recognition AI. In so doing, we pave ways for understanding the role of AI in mobile communication.

In the following, we first outline the theoretical framework for our critical design exploration and how it departs from Rich Ling's understanding of the ritual in mobile interaction toward an understanding of mobile visuality and sociality with the conceptual lens of play. This understanding takes mobile media materialities into consideration and shifts our focus to the agentic role of the AI. Through our critical designs, we explore the role machine vision algorithms play in the ritual of picture taking via a mobile app, and we conclude by outlining the consequences this might have for the future of mobile media and communication research.

Mobile photography as ritual interaction

Already in the early days of mobile communication, the constant availability of texting and calling functionalities led to novel forms of socialization and micro-coordination (Ling, 2004). Building upon Durkheim's, Goffman's, and Collin's work, Ling (2008) argues that ritual interactions are mediated by mobile phones or accompanied by practices of mobile interaction, which become part of rituals that further social cohesion. These ritual interactions (such as texting, calling, or miscalls) are today taken for granted and embedded within the realm of the mundane, fading into the background of everyday life (Ling, 2012). With the mobile phone camera, images play an increasingly important role, and sending a selfie on Snapchat, sharing a story on Instagram, or posting a video on TikTok are part of our ritual interactions, as we move through the world (Ling and Li, 2020). Social bonding through ritual interaction, however, remains one of the main aspects of increasingly playful forms of mobile communication (Ling, 2015). The ritual in this sense is a "mutually focused activity that engenders a common mood in a bounded group" (Ling, 2015: 187). Playful interactions on the mobile phone can result in a socially binding ritual. In other words, play is in itself a ritual characterized by social bonding (or potentially the reverse, exclusion, see Ling and Campbell, 2011).

Conversely, Miguel Sicart (2014) argues that to play is to be in the world, a way of understanding the world, and engaging with others. Drawing upon the constructivist approach to play as a mode of engaging with the world (Henricks, 2016), we understand taking pictures on the phone as a technical practice dominated by aesthetics and critical theory (Bardzell et al., 2018). Encoding pictures taken on the mobile phone camera into a visual form that is then shared through sociotechnical networks may contribute to social cohesion and become a part of ritual interactions in our lives, from weddings to crisis situations, but also as a part of our everyday interactions. If we then understand play as an experience of appropriative pleasure and means of creating order through rules (Sicart, 2014), these rituals are inherently playful.

In this work, we build on Ling's understanding of ritual interaction with the conceptual lens of play. Mobile rituals are based on rules that allow us to interpret and understand the world, and the places we visit and share with a socially bounded group through networks. This process of sharing, however, does not only underlie rules imposed by social interactions, but also by the AI, that processes, filters, and archives the pictures we take. It is these sociotechnical interactions that combined assemble the visualities and socialities underlying mobile interaction.

Image sharing apps and mobile visualities

In her essay *On Photography*, Susan Sontag (1977) argues that images are activated by their frame, become “furnished evidence” and at the same time “a more innocent, and therefore more accurate, relation to visible reality” (6). Taken through the mobile camera and mobile apps, images still do play the role of presenting a visible reality, and evidence furnished by filters and frames. Already in 2002, Ilpo Koskinen argued that the availability of a mobile camera and the possibility of sharing images through wireless networks would add an inherently social component to the “mobile image.” Today, mobile rituals of taking and sharing mobile images have become a part of our everyday interactions. The placement of images and the places in images through sharing via mobile apps, become a part of larger narratives presented within a hashtag, a profile, a page, or a news feed that we follow. In this way, social media apps function in addition to the camera, arranging the images in a flow of information sorted and framed by way of algorithms (Neumayer and Rossi, 2018). We document places in a playful and ritualized way and share them as a part of our everyday movements through the world.

Hjorth and Pink (2014) argue that “camera phone practices provide new ways of mapping place beyond just the geographic: they partake in adding social, emotional, psychological, and aesthetic dimensions to a sense of place” (Hjorth and Pink, 2014: 42). Place then, in their understanding, becomes a social practice rather than simply something geographical. They introduce the idea of “emplaced visibility,” which centers theories of movement around our understanding of mobile visualities (Pink and Hjorth, 2012). Images are not only emplaced by the camera itself but also by Instagram filters, geotagging, and the underlying socialities of platforms. Images taken on mobile phone cameras “become forms of visibility that are emplaced digitally, socially and materially” (Pink and Hjorth, 2012: 153).

The visual in such images is not only an outcome of a physical place and the photographer, but includes technologies, codes, software, and AI that are interwoven into the digital, social, and the material. They are social as they produce co-presence and a sense of place through social interactions; they are locative through their (still) geographical placement; and they are mobile, as they are taken by people who are in movement as they produce and consume images—spatially, temporally, and on digital platforms (Hjorth and Pink, 2014: 43). The emplaced visibility of mobile photography does not take as an endpoint the image taken on the mobile camera, framed by a filter and then sorted and arranged through social media platforms, but the image itself remains on the move, as it continues traveling through changing social, temporal, spatial, and digital relations (Hjorth and Hendry, 2015). Mobile visualities are then, inherently connected to mobile socialities which connect the material and imaginary worlds (Hill et al., 2021). It is the mobile ritual of picture taking and its underlying visualities and socialities, where we need to shift our focus to artificial agents of mobile apps.

Playing with artificial agents of mobile apps

The materialities of mobile apps (Neumayer, Mortensen and Poell, 2019; Pink and Fors, 2017) including algorithms, wires, platforms, and the policies surrounding them,

lead to new relations and interactions with the material that we need to observe in practice. Hjorth and Richardson (2020) argue that we need to understand practices entangled with mobile apps, particularly in the context of play and games, as these approaches allow for innovative and novel forms of engagement, care, and sociality. Ritual interactions on the mobile phone often include playful aspects, as humans interact with others, with the world, and with technology (Henricks, 2016). In playful rituals, interactions with algorithms play an important role, as they transform, explain, or give meaning to images. It is the perpetual iterations of rituals that become habitualized as a part of how we understand the world and the performativity of different roles we play in the world (Butler, 1990). In mobile rituals, artificial agents play an essential role in habitualizing and iterating such roles and perspectives—often in problematic ways (see, for example, Noble, 2018). Yet, how can we study artificial agents in the ritual of taking pictures on the mobile phone? What methods allow us to single out the interactions with artificial agents that are inherently a part of mobile rituals?

Sicart (2020) extends the relational perspective of play to humans engaging with technology. As Sutton-Smith (2009) argued, play is inherently ambiguous, and to use it as an epistemological concept requires defining what play is. In our research, play is the foundation of a design. Our goal is to better understand the entanglement between software and humans in the study of the ritual of taking pictures on mobile phones. We build on mobile media and communication research to make explicit that human agency in the ritual of taking and sharing photos with mobile devices, is deeply entangled with artificial agency, and we do so through play-driven design. We use play as a mode of foregrounding interactions with the AI in mobile rituals. Drawing on Maria Lugones' (1987) feminist theory of play, we rethink the different modes of agency in play, and how play embraces ambiguity, humor, and curiosity as ways of being in the world. Lugones describes the playful attitude as involving an:

openness to surprise, openness to being a fool, openness to self-construction or reconstruction and to construction or reconstruction of the “worlds” we inhabit playfully [. . .] playfulness is characterized by uncertainty, lack of self-importance, absence of rules or a not taking rules as sacred, a not worrying about competence and a lack of abandonment to a particular construction of oneself, others and one's relation to them. (Lugones, 1987: 17)

Following Lugones, the designing for play is creating a space of possibility for the agency of players for expressive, creative, and personal engagements (in our research through interactions with the AI). The mobile apps *Probably Not* and *World to Gif* use play as an entry point to create a space in which human and artificial agency meet in the ritual of mobile photography. We argue that a humorous approach to the norms and rules underlying interactions with the AI in mobile rituals allows us to disassemble and reassemble, which is key to understanding the material in mediated communication (Dourish, 2017; Gillespie et al., 2014). This process is akin to Sicart's (2014) playful appropriation of the world, since it involves engaging with a series of material, social, and cultural conventions, and upending them into a possibility space of play. The apps break with the rules of how we expect the AI to act and invoke the unexpected to bring forth an element of surprise. Doing so, they propose new rules that formalize a playful openness, which

makes visible the interactions with artificial agents in the ritual of taking pictures on the mobile phone. Play shapes the experiences of digital media, as it mediates our engagement with digital technologies (Frissen et al., 2015). Our apps make the engagement with AI tangible through play.

Making playful apps

To explore the interactions with artificial agency in mobile photography apps, we depart from Ratto's (2011) method, which connects "two modes of engagement with the world that are often held separate—critical thinking [. . .] and physical 'making'" (253). Ratto's method provides a framework for critical making which "emphasizes the shared acts of making rather than the evocative object" (Ratto, 2011: 253), in our context of critical and aesthetic forms of computer programming (Soon and Cox, 2020). The final object as a critical argument is displaced, and it is the process of "making together," that engages critical thinking. This process consists of three stages: reviewing the literature and compiling relevant concepts; designing and building prototypes (for extending technical knowledge and for conceptual exploration); and reconfiguration and conversation (Ratto, 2011: 253). The mobile apps in this research are the result of a parallel process of inquiry into relevant concepts of AI and mobile media and communication; and into actual mechanisms of machine-learning-based object recognition. That process led to an engagement with software frameworks, more specifically Apple's CoreML tools and Vision Framework. The resulting apps are instruments to extend our critical knowledge on technical systems and how they operate. We make apps that initiate a conversation around the application of concepts such as mobile ritual and play as epistemological instruments to explore interactions with artificial agency.

The playfulness of the mobile apps in this research underlies a critical design tradition (Gaver, 2009), but we situate our work as "design-oriented research" (Ratto, 2011: 254), where conventional user testing is not a part of knowledge creation. We adopt Bardzell et al.'s (2012) idea of critical design, attempting a disruption of dominant paradigms in design and theory. Their work draws from the Frankfurt School to critique cultural industries and the different epistemologies of design, since they are intertwined with a dehumanizing structuring of society around productivity, efficiency, and consumerism (Bardzell et al., 2018). In the tradition of the Frankfurt School, we do not only critique but also suggest critical alternatives. In this way, our work aligns with critical design, albeit from a different methodological angle.

Play-driven critical making is a process of inquiry through humor. The result is an attitude toward a particular technology or practice so that new configurations can be created (Sicart and Shklovski, 2020). The resulting objects are secondary to this attitude, which is our understanding of Ratto's (2011) "reconfiguration." By playing with the possibility spaces of mobile apps, playful critical making imagines new analytical applications of concepts. Instead of developing new methods or observing practices, we create a technology that draws attention to what could be researched, to what might constitute the core differential paradigm of mobile technology and, consequently, what needs further research. Lugones' (1987) feminist play theory wants to facilitate world-traveling, that is, the empathetic engagement with others through laughter and curiosity.

Through play and the process of making, we humorously appropriate the sociotechnical rules inherent to mobile rituals. We contextualize our playful critical making method using research through design as a framework (Zimmerman et al., 2007) to make explicit how the mobile apps are premises of reflection and critically untangling artificial agency in mobile media.

Untangling human–artificial relations of mobile apps

To understand the mediating role of AI in the ritualistic and expressive practices of image taking and sharing, we start from the premise that all mobile pictures are the result of an entanglement of human and artificial agency. That is, human action (individual and social), and the algorithms refine the picture and help situate it within the broader archives of practice that mobile visual media thrive on. These sociotechnical practices—from the individual camera roll on a mobile phone to the highly curated public profile of an Instagram influencer—are entangled mediations of what the user framed and took, what algorithms recognized in the picture, and (to use Hjorth and Pink’s, 2014, terminology) how the algorithm further “emplaces” the image.

The picture itself depends on the image processing algorithms to have clarity and color balance. It might also have been filtered, or it may be clustered with others depending on geotagging data or the presence of recognized faces, all of which are results of AI processes. Disassembling and reassembling these human–artificial relations is essential for mobile media and communication, as it situates the ritual and social aspects of mobile image sharing within the domain of a posthumanist human–machine entanglement. In our inquiry, we opted for a creative aesthetic method, with the purpose of illustrating how these entanglements are created, how they come about, the role of the artificial in the production of images, and how design can contribute to understanding the role of artificial agents in the ritual of picture taking on mobile phones.

The goal of our critical designs is not to *produce* products, but to create works that call for reflection and that in themselves carry a theoretical argument and conceptual weight. The process of creating and making in critical design is an engagement with the theory. In this sense, our critical design inscribes in the objects it produces the critical arguments it wants to further, an illustration of ideas not to consume but to reflect by active engagement. That is, our arguments are embodied in software running on actual machines, distributed using commercial means. The apps are created by drawing on theory driving our development and design processes, which leads to the apps becoming an argument in themselves. We interpret the “critical” as an opening for using theoretical concepts to explore alternatives to design that illustrate practices and modes of engagement with technology; and to identify dominant discourses with the purpose of subverting them.

We developed two apps that illustrate the ways in which research in mobile media and communication needs to acknowledge the presence of software agents modifying the ritual of mobile photography and turning it into a human–software entanglement; and how ritual-like practices mediate these software agencies. Through play we can observe software agency. Play theory offers a framework to understand the ritual in mobile image creation and sharing and a method to intervene in those practices by highlighting the role of artificial agency. We disassemble the rules of sociotechnical interactions, playfully

reassembling them using the same underlying commercialized AI processes to critique this very system, a *détournement* allowing us to critically reflect on the role of AI in such sociotechnical rituals (Leahu et al., 2008). The apps are available for download on the app store. This places them outside of the pure artworld into a commercial space, therefore allowing to explore mobile play (De Souza e Silva, 2017: 20) as a part of ritual interactions.

In the following, we introduce the sociotechnical interactions taking place in two critical designs of mobile apps: *Probably Not* and *World to GIF*. We describe their functionalities and critically reflect on the making process using four categories (developed by Zimmerman et al., 2007) to justify the design and its results. That is, we focus on how the designs reflect about their *process*, formulate an *invention* that is *relevant* for design and theory, and the result is *extensible* and can be used by other researchers; and how they critically engage with essential characteristics for the design of mobile play—*mobility*, *sociability*, and *spatiality* (De Souza e Silva, 2017: 20).

Probably Not: accuracy is a joke

Probably Not is a photography app that uses AI to recognize the dominant object in a picture frame. It then returns the picture, including a description of what the object is not. The app has two modes, “probably not” and “absolutely not,” and a game function that uses the same technical backend. In *Probably Not*, users can either select a picture from their camera roll or take a new picture. Once they do so, a label on screen will tell them what the dominant object in the picture is “probably not,” or what the object is “absolutely not.” The game is a more complicated interaction: it prompts players to try to find objects that might be understood by the program as a particular object, say a toothbrush, even though they are not. For example, taking a picture of a broom can make the user win the game if they were asked to find a toothbrush (Figure 1).

The systems behind *Probably Not* are very simple: the software runs an object recognition model. Once the program has identified the dominant object in the picture, the program returns an array of strings with the possible objects in the picture. The array is ordered from the most to the least probable object in the picture. *Probably Not* selects either the second item on the array (in the “probably not” mode) or the last item on the array (in the “absolutely not” mode) and prints that on screen.

Probably Not explores the interaction with the AI with the deviation that, instead of the algorithm identifying entities in the image that has been taken, the algorithm tells you what the image (probably) is not. The app challenges our expectations about algorithms’ roles in finding patterns that allow for recognition of similar objects (such as facial recognition built into the app connected to the camera of the mobile device). This deviation from how we expect the algorithm to interact with us allows us to critically engage with the algorithm, but it also turns the algorithm into a joke. Building upon forms of social bonding characteristic of mobile communication (see Ling, 2015), a selfie, for example, shared with the banner “PROBABLY NOT a remote control” is then turned into an inside joke that may lead to new social relations and social bonding. These new social relations are, however, not determined by social interactions through mobile technology, but through interactions with the AI and as such the mobile device itself. The shared

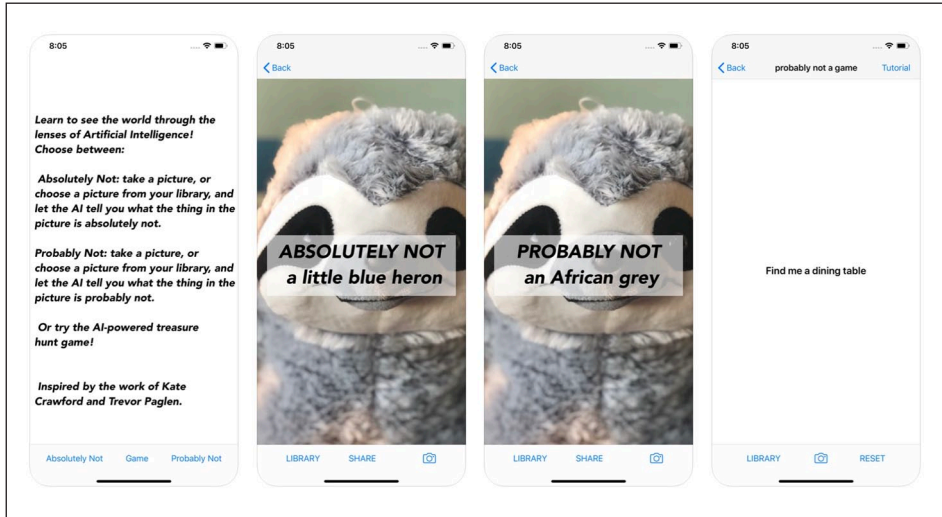


Figure 1. Screenshots of *Probably Not* app on a smartphone.

understanding of the joke contributes to identity formation, as it situates an “us” compared with others who do not share the same ritual interaction with the AI as a part of their navigation of everyday life. The images with the shared understanding of the banner produced in *Probably Not* may be shared on social media platforms (such as a Facebook profile picture with the banner “ABSOLUTELY NOT a space shuttle” created through the *Probably Not* app). That is, the shared playful ritual of interacting with the AI allows for new identity and group formations. Unlike other social interactions through mobile apps, the interaction with the AI is foregrounded, made visible, and turned into a social ritual in itself—rather than shaping interactions in the background rendered invisible by design (Neumayer, Rossi and Struthers, 2021).

Probably Not contributes to reflecting about mobile rituals of picture-taking through its *process*, as it engages with the normative discourses about precision and accuracy in AI. Object recognition, like many other machine learning systems, is based on the accuracy of predictions. *Probably Not* ridicules the accuracy by returning not what the computer tells you it is, but what it is not. By reassembling the rules of the interactions with the AI, it makes the processing of objects and recognizing them through the machine vision algorithm visible and laughable, and produces unexpected interactions with the artificial agent that break with the precision in recognizing objects we normally expect in such interactions. Play facilitates that engagement. In the process of making *Probably Not*, the application of humor (a form of anti-ritual, see Douglas, 1968) reconfigures the patterns of conventional use of mobile photography apps, in a way that makes visible interactions with artificial agency and encourages a playful world traveling.

As it is an AI-powered system based on the concept of error rather than that of statistical accuracy, *Probably Not* is also an *invention*. It humorously critiques the trust in AI, revealing how that trust is mostly a statistical belief. Instead, the assumption that AI can

be accurate enough to recognize objects, *Probably Not* formulates a humorous aesthetic of error. *Probably Not* also suggests a way forward in our understanding of how to use AI *creatively* in mobile rituals, as it allows us to imagine alternative interactions with the artificial agent that are not built on the premise of trust in AI. It helps formulate the roles of AI in mobile apps production, which then makes the study of phenomena such as image filters open to playful inquiry. In doing so, *Probably Not* breaks with rituals of mobile communication and creates new ones. The interaction with the artificial agent allows us to critically inquire image filters which may become a part of a new ritual. Yet, the sharing of the image then is taking place on other social media platforms returning the image into an ecology of quantification by liking and sharing.

Probably Not is *relevant* because it illustrates the growing importance of AI in processing images in mobile media. While the app is focused on object recognition, many other mobile image apps are using AI not only to recognize and tag faces, objects, and locations, but also to enhance pictures accordingly. All these enhancements are grounded in the assumption that the AI systems are going to be accurate. Yet, *Probably Not* explores what happens when the interaction with an AI through mobile media is not based on accuracy but on error, and what creative possibilities emerge as a part of mobile rituals through that interaction. At the same time, *Probably Not* is relevant because it highlights the statistical nature of many AI systems, and through humor illustrates the ritualistic aspect of sociotechnical interactions based on trust in the accuracy of statistics.

Finally, *Probably Not* is *extensible* because it participates in a new form of humor-based ritual with AI. Instead of submitting to the statistical whims of the machine, *Probably Not* shows how an anti-ritual approach to AI might help us better understand the role AI plays in mobile media and communication research. *Probably Not* allows for the application of play theory as an epistemological lens to understand ritual interactions involving visual mobile media creation. It gives us the possibility to imagine mobile media apps that allow us to document the world (as we do with other apps), but instead of precision and recognizability of places, objects, and individuals, *Probably Not* displaces the visual by ritual interactions based on error. *Probably Not* creates a meeting point between human and artificial agency through the ritual of taking pictures on the mobile phone. We appropriate this meeting point through play (Sicart, 2014), to create a context in which artificial agency is foregrounded and given a surprising role through error. In doing so, artificial and human agency meet, which helps redefine both the photographer and the artificial agent as a participant, playmate, or creator in such ritual interactions.

Probably Not then, is not an alternative to existing apps, but it makes visible what is otherwise pushed into the background in rituals of mobile communication. Through playful appropriation, it questions the “ties between images, referents and labels” (Crawford and Paglen, 2019: n.p.) that we normally take for granted in interactions with artificial agents. While the feeling of “connected presence” (Licoppe, 2004) is still produced by mobile photography as we move through the world taking pictures on the phone as a part of our ritual interactions (Ling and Li, 2020), the reshuffling of expectations to the AI breaks with mobile visualities (Hjorth and Pink, 2014). Instead of the AI as an invisible infrastructure on mobile phones (Crawford, 2021) providing

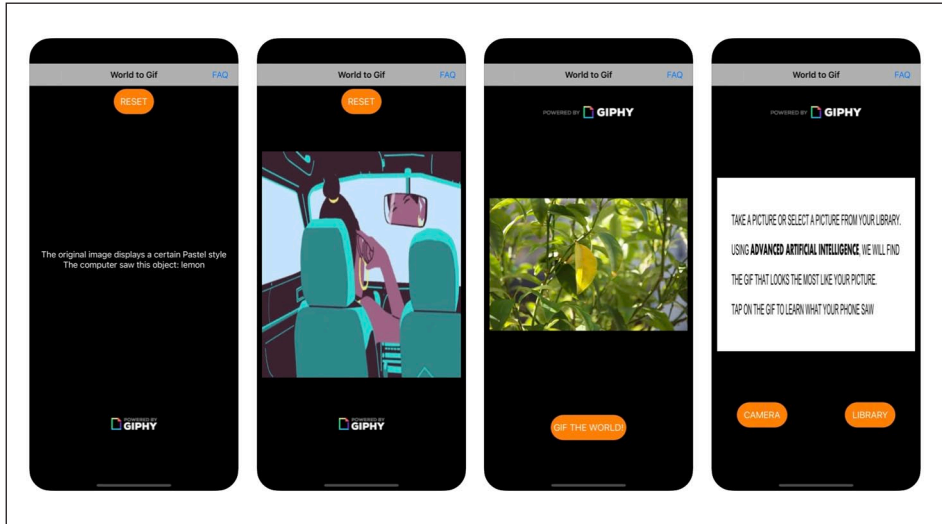


Figure 2. Screenshots of *World to GIF* app on a smartphone.

exact information about geolocation, face-, and object-recognition in images, we make the interaction with the AI visible and a central part of mobile rituals.

World to GIF: playful collaboration with AI

The visibility of processes such as labeling and classification through the AI becomes more apparent in *World to GIF*. “Turn your world into a GIF and show it to others before it’s gone forever!” (*World to GIF* on App Store). *World to GIF* is structured around a very simple interaction loop. In *World to GIF*, the user is prompted to take a picture or select a picture from their camera roll (Figure 2). Once they do that, a button in the user interface allows to “GIF the world.” That button invokes a relatively simple process: the picture taken is processed through three different AI-powered image recognition systems. The first system uses style analysis, and the result will yield a string that describes the dominant style in the picture, for example, “pastel.” The second system uses object recognition, and the AI analysis will result in a string that contains the dominant object in the picture, for example, “car radio.” The third system checks for nudity in the picture and returns a Boolean if the image recognition algorithm detects nudity. If the result is true, the program will return an “NSFW” string. Once these three processes are done, the program combines the three strings into one and then uses that resulting string to query the Giphy service API.⁴ This query returns an array of possible GIFs, of which the program selects one at random and displays it on the screen. The app then returns “the GIF that is closer to the picture you’ve taken” (*World to GIF* on App Store).

Users can tap on the resulting image to see a detailed explanation of what the program saw in terms of style and dominant object. Through that function, we can “see” what the AI sees in the image (Paglen, 2019), how it classifies entities, and which labels it attaches

to an image. While interactions with the AI always take place when we take pictures on the mobile phone, they usually run in the background, rendered invisible but playing an important role for visualities and socialities in rituals of mobile interaction. *World to GIF* plays with the traceability, storage, and commercial use of visual data shared through mobile apps by rendering the results of the app ephemeral and not allowing for local storage of the GIFs.

As a photography application, *World to Gif* uses AI to translate pictures taken by the user into GIFs sourced from the Giphy service API. Animated GIFs have become a staple in online communication, used in bulletin boards and social media to quickly and snappily convey meaning, usually as a memetic resource. At the same time, photography and videos taken with mobile devices have become the core of the success of Instagram and TikTok. These are more conventional images with traditional photography and video adapted to the particularities of social media, but that have a different social and communicative purpose. As in other humorous online formats (such as memes, Mortensen and Neumayer, 2021), the playful appropriation of the image and the context it is taken in, is at the core of *World to Gif*. While the shared set of rules of the playful appropriation are usually based on social norms of in-group and out-group (such as “Gen-Z” playfully engaging with the “Boomers” in TikTok videos, Zeng and Abidin, 2021), the AI follows rules such as object recognition and labeling. *World to Gif* reshuffles our normalized expectations to the AI and turns the artificial agent into a co-creator humorously engaging with mobile photography and creating a new image by creative appropriation.

World to Gif challenges our expectations of images taken of the world. The app translates images taken on the mobile phone camera into another form, a GIF, taking what Hjorth and Pink (2014) describe as “emplaced visualities” to an extreme. It thereby deviates from the ritual of taking pictures and sharing them on digital media platforms as authentic proof and as producing a feeling of being in the world by sharing an image of the world. Turning the picture taken on the camera of a mobile device into a format that is detached from the authentic representation of the world instead leads to a humorous appropriation of the ritual. The images are still made by people who are in movement, but as *World to Gif* demonstrates, they are also made by the artificial agent that is always on the move. It makes apparent that we need to extend this understanding of mobility to artificial agents, who playfully take images out of context and recontextualize them as a visual citation of a different place (the one in the GIF).

With *World to GIF* we explore the convergence between the communicative practice of using GIFs and pictures to communicate, but also to observe and reflect on the role of technological mediation in the cultural process of creating mobile media. *World to GIF* contributes to reflecting about mobile communication through its *process*, since it combines the human ritual process of taking pictures with mobile media, and the artificial processing of these pictures by computational systems. *World to GIF* shows how mobile media research requires an understanding of the elements of AI that are taking decisions in every picture taken. Making those decisions visible through *World to Gif* makes explicit the sociotechnical interactions underlying rituals of mobile communication.

World to GIF is also a novel *invention*, in that it uses two different computational systems in an unprecedented way: a collision that is the source of the humor and the play

of the software. Combining object and style recognition with GIF search, *World to GIF* integrates different technologies and practices in a novel way. This integration is inherently a part of today's mobile communication, since, for example, Snapchat or TikTok filters already provide playful engagement with object recognition. Our work goes beyond using AI to spice up already existing "content," as it creates new forms of content, again breaking with the assumptions of sharing place as material geographical locality when taking pictures of the world on the phone camera. Rather than emplacing the image by sharing it online with a filter provided through machine vision algorithm and the image then being constantly on the move as it travels social, digital, and algorithmic contexts, *World to GIF* turns the image into a new ephemeral form, which cannot be stored or travel on. Instead, the app asks the user to show the image to others before it disappears, and it cannot be commercialized or turned into data. The interaction with the machine vision algorithm on the phone does not replace rituals of social interaction through mobile phones, but it makes visible the interactions taking place with artificial agents, which are inherently a part of mobile communication today.

Finally, *World to GIF* is *extensible* because it is part of a broader argument—the one we are presenting in this article. The ritual of taking pictures on mobile phones, and thus the very methods and topics of mobile media and communication research, need to become attuned to the inevitable entanglements between human and artificial agency that are a part of mobile media. *World to GIF* humorously engages with these entanglements, makes them visible, and challenges us as researchers to think beyond what we see as the picture, and to think what kind of social, technical, and cultural entanglements lead to particular forms of aesthetic, social, and visual expression.

Artificial agency and the future of mobile media and communication research

As our playful critical designs demonstrate, in today's computer-mediated environments artificial agents are inherently entangled with rituals of taking pictures on the mobile phone. If we are to understand artificial agents in such rituals, we need to further disentangle the human–AI interactions that are always present but mostly hidden in such rituals. To do so, we propose playful critical interaction design as a theory and a method that allows us to disassemble and reassemble mobile apps. Using play theory (Sicart, 2020), we acknowledge that artificial agents are indeed an assemblage comprised of elements such as commercial algorithms (such as the machine vision algorithm used in our designs), the rules defined by the ritual interactions (such as ephemerality vs traceability), their underlying imaginaries and purpose (such as precision vs error), the app store (which allows for their functional use), and the app (with the purpose of tracking or ephemeral, pleasurable, critical interactions). In our critical interaction designs we developed apps where we take these assemblages apart, change their rules and relations in a playful and humorous way to make visible, and critically reflect on interactions with artificial agents. This allows us to not only ask how mobile communication takes place in the world but also lets us begin to imagine critical alternatives.

For the future of communication research, we argue that we need to pay attention to artificial agents that play an increasingly important role in mobile rituals, particularly in the processing of images taken on mobile cameras and via mobile apps. While these artificial agents (such as machine vision algorithms) have been taken into consideration in the study of mobile visualities and socialities (such as Hjorth and Pink, 2014), we need to build on such approaches and integrate methods and conceptualizations that allow us to not only critically investigate practices including artificial agents but to untangle the human–software relations of mobile apps. This research untangles these relationships and renders artificial agency visible in the mundane ritual of taking photographs with mobile media. Through play as a mode of critical making, we have highlighted the inevitability of AI in mobile photography and in any ritual interactions taking place through mobile technology entangled with the visual. Within the space that we have created through critical making, we do not provide answers but rather ask more questions. As is often the case with such interdisciplinary inquiry, this is a starting point, a space of possibilities, rather than a means to its end, a proof of concept or invention of a new one. The mobile apps give us an idea of how the AI sees the world, building on a critical aesthetics perspective on the ways machines “see” (Paglen, 2019). Such insights can lead to more critical work on machine vision and its ethical and political repercussions (Crawford, 2021), which becomes increasingly relevant, particularly for rituals involving the visual in everyday social interactions. Integrating a playful approach to the design of modalities of machine agency as they are a part of mobile rituals, into the field of mobile media and communication research may be a first step to do so. Disassembling the rules of the interactions with the AI and reassembling them in *Probably Not* and *World to Gif*, may give an idea for such new avenues of research.

Conversely, we need mobile communication research to be a part of the (critical) design of mobile technology to understand the basis on which we can disassemble and reassemble mobile apps that are so intrinsically a part of our world and even more, shape the way we act and live in the world. Doing so in a playful way (as we have done with these critical designs) lets us imagine new ways of interaction with the world through the lens of AI. As rituals of social interactions through mobile technology engaging the visual are a part of every facet of our everyday lives (Ling, 2015; Ling et al., 2020), we constantly interact with artificial agents. As these rituals indeed hold our society together, the study of artificial agents in such rituals needs to build on insights from mobile media and communication research. For understanding how mobile communication takes place in the world and based on that imagine alternatives through playful interactions with the AI, critically reflecting on and untangling artificial agency as one of the essential parts of mobile communication may be a good start. With our method of disassembling and reassembling mobile apps in a playful way by breaking with rules, dominant discourses, and expectations, we do not only ask “how” but also start to imagine “what if” in a critical and reflective way. In other words, through disassembling and reassembling mobile apps, we “[l]earn to see the world through the lens of Artificial Intelligence, and have fun with it” (Absolutely Not on the App Store).

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Notes

1. Probably Not on the App Store, available at: <https://apps.apple.com/dk/app/probably-not/id1491823325>.
2. See Note 1.
3. World to GIF on the App Store, available at: <https://apps.apple.com/us/app/world-to-gif/id1559084516>.
4. Giphy service API, available at: <https://developers.giphy.com>.

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