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The quest for "nature" in selfies: how platforms shape nature/society relationships

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Social media and other platforms have become an essential part of outdoor activities as they influence how nature is experienced and engaged with, but also what good nature is seen as. In this article, we explore how social understandings of nature and digital technologies are mutually performed. Using the empirical case of nature selfies—an archetype of imagery on social media platforms—posted on Instagram, Facebook, and Tripadvisor, and a small participatory "breaching experiment" aimed at collecting "ugly nature selfies," we analyse and interrogate nature/society relationships displayed online within the platform contexts of attention economy and affordances. We conclude that nature selfies reinforce the desirability of consuming "beautiful" nature, while attention economy and platform affordances limit the possibilities for alternative nature/society relationships to be developed and promoted.

Keywords: Attention economy; affordances; selfies; human-nature relationships; outdoor experiences

1. Introduction

Time and culture shape nature/society relationships and give landscapes specific societal meaning (Schama 1995). In contemporary society, smartphones and other mobile technologies have become an important part of outdoor recreation (e.g. Arts *et al.* 2021a; Hitchings and Maller 2022; Hitchner *et al.* 2019), and the sharing of images, geolocations, trails, or experiences also influences how, when, or where outdoor activities are pursued (Arts *et al.* 2021b). In this context, social understandings of nature and digital technologies are mutually performed: nature/society relationships[1] are negotiated digitally while they simultaneously guide what can be expressed digitally (e.g. Carr and Milstein 2021; Hitchings and Maller 2022). This is further shaped by the algorithmic logics that impact how people can interact with each other and specific platforms (Marres 2017).

In this article, we argue that, and demonstrate how, digitally-mediated nature/society relationships, including societal ideas of "good outdoor experiences" and "good nature," are mutually co-constructed through technology, nature, and people. As thinking tools related to technology, we consider two concepts in particular, namely

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attention economy—a system in which measures of attention and engagement are commodified (e.g. Brandon 2021)—and affordances—the programmatic possibilities for interaction which enable and constrain interaction (e.g. Haider 2016). Both these are essential technological aspects of platforms and strongly shape interaction and thus discourse (Haider 2016; Marres 2017).

Empirically, we investigate nature/society relationships using the example of nature selfies shared on the Swedish-speaking internet. While selfies (e.g. Faimau 2020; Kedzior and Allen 2016; Liu 2021), and to a lesser extent nature-related online content (e.g. Arts *et al.* 2021a, 2021b; Carr and Milstein 2021; Joosse and Brydges 2018), have received attention by scholars, a systematic exploration of nature selfies is missing (for an essayistic engagement with nature selfies, see Kohn 2018). Nature selfies relate the photographer to specific outdoor locations, views, activities, and experiences, as they reflect the photographer's imagination of themselves and their surroundings (Liu 2021). These imaginaries—building on the genres of nature photography and selfies—are plausibly idealising nature (e.g. Chianese 2014) and/or bodies (e.g. Bell, Cassarly, and Dunbar 2018). While taking and sharing selfies can arguably be understood as an individual undertaking, we here shift analytical focus away from the people engaged in a practice of selfie-sharing toward the algorithmic contexts of production and reproduction of attention in a society characterised by digital ubiquity, thus analysing platforms instead of people (Van Dijck 2009).

The specific entanglements of technology, nature, and humans explored in this article contribute to dominant discourses of shareable, good, or "Insta-worthy" (Arts *et al.* 2021a) outdoor recreation that invite people to reproduce and share certain experiences and images, while relegating other nature/society relationships to the background. For our analysis of digitally-mediated nature/society relationships with the example of nature selfies, we employ an exploratory methodology to identify and discuss the nature/society relationships highlighted in Swedish nature selfies in relation to their platform-specific modes of production and reproduction. The study is embedded in a rich cultural history of pursuing outdoor activities related to the Swedish and Scandinavian term *friluftsliv* ("open-air living"), with strong cultural connotations ranging from romantic ideas of nature connectedness towards contemporary ideas of doing activities outdoors (Gelter 2000, 2010). These three cases are all situated in this context through either their naming or the typical *friluftsliv* activities they suggest; the cases concern #*friluftsliv* on Instagram, an outdoor challenge in a Facebook group, and kayak rental reviews on Tripadvisor.

In the following section, we discuss research on nature/society relationships in Sweden, specifically on *friluftsliv*, in combination with research on online platforms. In section three we move to our conceptual framework and introduce two key concepts underpinning our analysis, namely attention economy and affordances. In section four, we detail our research questions, and present the ways in which we studied these questions. In section five to seven, we respond to our research questions by describing, interpreting, and reflecting on our material, before we conclude in section eight.

2. Background: nature/society relationships in *friluftsliv* and on online platforms

The dominant Swedish understanding of nature is shaped by "the self-image of Scandinavians as a nature loving people" (Gelter 2000, 79) and the comparatively sparse population which leaves even many urban dwellers in close proximity to nature. Two important concepts prefigure these relationships: First, *allemansrätten* ("every-

one's-right") is the legal context allowing everyone to access and enjoy nature regardless of land ownership—as long as farmland is undisturbed and people stay clear of gardens. Second, *friluftsliv* suggests that the outdoors should be enjoyed and appreciated.[2] The concept of *friluftsliv* formed in a romantic "back-to-nature" response to increasing urbanisation in the eighteenth century. Especially for the upper-classes—as they did not work outdoors—pursuing what was later termed *friluftsliv* was an attempt at realising these romantic ideas of connectedness to and participation in nature (Gelter 2000).

Over time, these ideals were replaced by a high-tech and activity-centred engagement with nature. Postmodern *friluftsliv* is thoroughly commercialised and often overlapping with public health and outdoor tourism: Organised activities, ever-better equipment, challenging oneself, and an outdoor recreation industry, but also athletic achievements or nature as a space for relaxation overshadow the romantic ideals of *friluftsliv* (Gelter 2010). While Gelter suggests that *friluftsliv* does not require "remote untouched wilderness" (2000, 80), he posits that photographers, spectators, or "nature tourists … often consume places without becoming emotionally connected with them, as their purpose is simply to have seen it" (2000, 81). Without imbuing judgement, Gelter acknowledges the deviation of postmodern *friluftsliv* from an ideal of *friluftsliv*, the latter proposing that nature experiences should emphasise connectedness to and participation in nature. Within this context, 2021 was declared the "year of *friluftsliv*" in Sweden. This aimed to contribute to highlight *friluftsliv* in public discourse, support public health, increase knowledge about natural and cultural values, and more employment in nature tourism and outdoor experiences (Naturvårdsverket 2023). Similar developments concerning the commercialisation of nature and commodification of nature experiences can be observed across the globe (e.g. Cloke and Perkins 2002; Coffey 2001).

The commodification of nature tourism along the quest for recreation in sublime nature is a global phenomenon (e.g. Drennig 2013; Duffy 2014; Reis 2012). Many indigenous worldviews, however, are in contrast to this, such as worldviews of the indigenous *Sámi* people of the European Arctic. As part of *friluftsliv* and increasing tourism, *Sámi* culture and land may get appropriated: much of what *friluftsliv* might consider "remote" or "untouched" land providing wilderness experiences in Sweden, is the traditional land of the *Sámi* people resulting from millenia of living with the seasonal course of nature, most notably through reindeer herding (Viken 2022). Traditional artefacts and patterns are commodified through souvenirs and advertising, so that indigeneity is appropriated (Keskitalo *et al.* 2021). This includes items such as the traditional wooden vessel *guksi* (*kåsa*) which is popular in *friluftsliv* activities. The intertwined engagement of *Sámi* people and nature, however, bears different implications for spiritual, conservationist, and other connections to nature (e.g. Elenius, Allard, and Sandström 2016) than *friluftsliv*. Since the majority of the Swedish population or visitors to Sweden—including presumably those that share selfies as part of the selected cases—is primarily influenced by the nature/society relationships as part of *friluftsliv*, we only consider *friluftsliv* as a context for this study.

Online platforms significantly shape how we imagine engagements with the outdoors and thus nature/society relationships—including *friluftsliv*—and vice-versa. While research focuses often on the users themselves, some studies also explicitly consider how platforms contribute to this engagement: First, as people rate, comment, and/or "like," they make places or activities more visible and findable to others,

possibly enticing others to seek out a given place in order to "share" the same experience (Arts *et al.* 2021a; Liu 2021). The algorithms underlying most commercial online platforms tend to include positive reinforcement, which means that more popular content is amplified even further.[3] On some platforms, this gives rise to so-called influencer culture, which is a major contributor to popularising specific (outdoor) experiences (Goodman and Jaworska 2020). Second, mobile applications and online communities are often consulted to control and "enhance" outdoor experiences, for example by providing additional advice about weather, seasons, or best routes (Arts *et al.* 2021b), which increases the likelihood of people taking "share-worthy" images during a trip, thus reproducing this specific discourse. Finally, social media emphasises and reproduces positive experiences: users largely describe positive and only seldom negative experiences; similarly, extraordinary events or encounters are more likely to be shared than ordinary ones (Hausmann *et al.* 2020).

An understanding of seeing foremost positive things implicates the reception of content: Analysing reviews of outdoor experiences by tourists on Tripadvisor, Carr and Milstein (2021) suggest that even if photographers cannot avoid capturing signs of "anthropogenic destruction" in their photographs, they rationalise and frame these aspects in a positive way in the accompanying text. Similarly, Berglez and Olausson (2021) suggest that when users post about flights or other high-carbon activities on social media, those users—often in collaboration with their peers—justify these posts as being conditionally positive, isolated, or unavoidable incidents, i.e. they are interpreted as permissible exceptions and not to be criticised. Furthermore, selfies may intersect with issues of visibility, for example when marginalised or underrepresented groups in outdoor spaces share their experiences on social media (Stanley 2020). While positive reactions may signal support to both cause and selfie, negative reactions to these selfies reproduce hegemonic ideals and are thus offensive to the affected communities. Overall, these examples emphasise the roles to uphold normalcy which social media in general and selfies in particular bear: nature selfies that collide with implicit norms of selfie-taking, "share-worthy" outdoor experiences, or *friluftsliv* are less likely to be shared on social media. And in case they were shared, such images might be framed and most likely interpreted as conditionally positive and part of a cause. Contextualisation of selfies—whether apologetic, permission-seeking, signposting, or otherwise—thus acknowledges the variety of norms and their situatedness that enable and constrain nature selfies on social media, for example guiding how and with which backgrounds bodies are to be seen or where certain selfies can be shared. We will return to this in the discussion of our empirical material.

Research engaging with digital spaces needs to consider how programmed interactional patterns produce meaning (Marres 2017). Accordingly, in this article, we consider the performative aspect of engaging with and sharing nature experiences as related to broader meaning-making on the environment and to existing use of a specific platform (Hitchner *et al.* 2019; Joosse and Brydges 2018), as we are empirically concerned with the co-construction of technology, nature and people concerning "shareable" nature. In doing so, we draw on Goodman and Jaworska who argue that any analysis of digital communication needs to consider "what kind of norms and practices (i.e. grammars) emerge and circulate" (2020, 184); that means, how communication on an individual platform can be enacted shapes what users consider good and successful communication. In the next section we introduce two concepts to investigate how social media are constitutive of nature/society relationships: the attention

economy as an overarching framework, and platform affordances as shaping interaction.

3. Concepts: sharing selfies in the attention economy and through platform affordances

Social media, recommendation services, and many other online services are often called multi-sided platforms: services that amalgamate different interests of users and producers, businesses and customers into a complex web of relations and ideas (Abdelkafi *et al.* 2019). These platforms blur the boundaries between "producers" and "consumers" by co-opting people into the production of what is called "user-generated content." This content is evaluated and remunerated through attention: people's looks, glances, interactions, and time—or more precisely their measurement through quantified engagements, such as "liked," "shared," or "watched" counters. The attention economy thus describes a system in which attention has commercial value as it is assumed to induce other economic exchanges. This means that platforms, advertisers, or aspiring influencers seek to maximise interaction with each other but mainly to create incentives for users, or more precisely consumers, to become attached to the platform (Zulli 2018). Concretely, people are motivated by the desire to gain and maintain attention and popularity (Van Dijck 2013) and perhaps even more so by the fear of becoming invisible and therefore irrelevant (Bucher 2018). Posting selfies also generates substantially more likes and comments than posting other, non-selfie imagery (Souza *et al.* 2015). Furthermore, by creating and sharing this type of content, people invite and expect feedback from peers and wider audiences (Li *et al.* 2018). Inviting follow-up attention much more than other online content, the selfie is therefore an archetype of desirable imagery promoted by the attention economy in general and on multi-sided platforms such as social media in particular. As people collect "likes," "followers" or "subscribers" for themselves (Li *et al.* 2018) or to increase their market value as influencers (Marwick 2015), attention appears to become an end in itself (Hristova *et al.* 2020), often disguising the monetary incentives tied to the data extraction business model underpinning commercial platforms. Obviously, different platforms target distinct markets and user groups and thus also afford attention in different ways. Nevertheless, attention translates into value that can be exchanged and often manifests as monetary worth. This transaction is not necessarily direct, and the actor garnering attention—such as through posting a selfie—is not automatically the primary beneficiary.

Selfies are devices of visual storytelling which locate the self (i.e. the person interacting with a multi-sided platform) centrally in some experience that is shared (Faimau 2020; Zappavigna and Zhao 2017). Selfies can empower individuals and/or their communities while simultaneously subjecting them to social norms and control (Kedzior and Allen 2016): On the one hand, selfies can help individuals to present themselves in a certain light or act within or as part of a community, and on the other hand, they reproduce certain norms of what and how to represent (e.g. Bell, Cassarly, and Dunbar 2018; Burns 2015). Further, the act of taking and sharing selfies can be encouraged by community-specific ideas. For example, when people portray the self in a specific location, they stake claims of presence or achievement (Arts *et al.* 2021a) thereby constructing an identity which is desirable within a community. As discussed previously, this is likely driven by recommendation or imitation, including by recognisable actors

or those with high follower counts such as social media influencers or guide websites. For example, people may take selfies in recognisable or recommended locations, imitate a specific style, or use a specific filter (Arts *et al.* 2021a; Liu 2021). Thus, people have a stake in both appreciating and reproducing the norms of "beautiful" nature on social media as they "chose to post extraordinary hikes, rides or climbs, stunning views or recognizable places, which were shaped by participants' norms of what an Instagrammable landscape looked like" (Arts *et al.* 2021a, 11). Overall then, attention-brokering affordances such as "like" buttons and ideas of recognisability invite people to create selfies in an identity-affirming and rather homogeneous way.

Affordances, a concept originally proposed by Gibson (1979), describe the interactional possibilities of an entity, such as a platform's user interface. The concept helps to explain how particular situations, settings, or tools provide opportunities for certain actions and make others, while not necessarily impossible, less likely. Affordances give rise to "processual *regularity*" (Goodman and Jaworska 2020, 184), which includes norms and practices suggestive of the way a platform ought to be used and what ought to be shared there. Instagram, for instance, has certain features that favour visual content, making images the most popular way to communicate on this platform. Yet, affordances can neither be reduced to the technical features of an application or a tool, nor to people's behaviours or societal expectations alone, but arise at the moment when these converge and give meaning to each other (Haider 2016; Hutchby 2001). Thus, affordances are also rooted in community-specific expressions, norms, or best practice.

Selfies are afforded by social media and their specific conditions for connecting profiles of individuals, companies, or other actors. They are rewarded and incentivised by peer-to-peer feedback mechanisms such as sharing, liking or commenting—whereas on Tripadvisor, a platform with a built-in reward mechanism, all photos are recognised equally. Selfies can be displayed for wider audiences through affordances of hashtags or groups, but also by tagging other users or marking a location. User interfaces may also encourage selfie-sharing, such as Instagram's textless grid overview of pictures, which makes centrally located, easily identifiable objects more easily recognisable. Finally, selfies are enabled by the smartphone with its front-facing camera, as well as by smile-detection and image filters in the photography apps, including those included in apps of social media platforms.

4. Materials and methods

Following our understanding of a selfie as locating a self centrally in a shared experience, we operationalise a "selfie" to be an image that visually infers the subject position of the photographer (Zappavigna and Zhao 2017). This could include a face or body parts of the photographer, but could also locate the photographer in the picture through physical extensions of the body (such as sports equipment), a shadow, or footprints. Any selfie posted within the boundaries of our outdoor-based cases we interpreted as a nature selfie.

Working toward the aim of understanding nature selfies and their platform context as producing and reproducing nature/society relationships, we subjected these nature selfies to the following three exploratory and interpretive research questions. Following a trajectory from descriptive, to interpretive, to reflective, each of these questions is addressed in its own section:

1. How do nature selfies shared on social media platforms relate nature and people? (Findings)
2. Which nature/society relationships are afforded through nature selfies? (Analysis)
3. Could it be otherwise? (Discussion)

In order to explore these questions, we identified three cases from different platforms and with different participation logics that relate to Swedish *friluftsliv*. The cases were chosen to explore nature selfies on a variety of platforms without overinterpreting platform-specific affordances. Concretely, the cases are: (1) the hashtag #*friluftsliv* on Instagram, because the platform is known for its selfie-culture and the hashtag is organic (i.e. it is popularised through ongoing use and is not orchestrated as part of a specific campaign or challenge, see e.g. Abrahams and Leber 2021); (2) a challenge as part of a Facebook group which awards "certificates" to people who claimed to have visited a certain number of nature reserves or national parks, because the platform is traditionally rather text-based and the challenge sets clear guidelines for participation without making explicit mention of selfies; and (3) reviews of kayaking experiences on Tripadvisor, because it is embedded in a commercial logic where selfies seem unexpected, and because it is not a social network but still monetises the attention of its users—concretely, recognition happens based on participation not on peer interaction (i.e. points are awarded for any post or picture, and little value is attributed by peers' "likes") and the platform earns from directly selling experiences. As no case requires people to post selfies in order to participate, identified selfies can be understood as inviting some sort of additional feedback by other users (Li *et al.* 2018; Souza *et al.* 2015). For each of these cases, we defined a scope including platforms, search terms, and the time frame of our data collection. Table 1 outlines the three cases and illustrates what internal or external rewards for participation exist. Detailed descriptions of case, platform contexts, and relevant affordances can be found in Appendix A.

In a shared document we reported on the selfies (including links to the pictures) we found in the three cases. Here we shared observations and interpretations. In weekly meetings we discussed our findings to develop the analysis. Given our interest in the interaction of people, platform, and nature, we went beyond the selfie and also investigated how people circulate selfies and interact within the case on the specific platform. Thus, we noted down observations relating to: (1) the images themselves; (2) the images in combination with their directly co-located text (e.g. descriptions written by the user and any responding comments); and (3) their context within the case (e.g. by considering platform affordances and functions, and by considering visually close non-selfie images). We adjusted our ongoing analysis based on emergent patterns and insights. For example, triggered by our data, we started to pay attention to the role of human-made materials (such as maps, or mugs) early on. As seasons have a significant influence on *friluftsliv*, we collected selfies during a longer time period, between February and June 2021, and except for the Instagram stream, also included material posted earlier, since the other platforms enabled the viewing of those. After a while and looking at dozens of nature selfies in each case, we found that for each of these three cases, motifs, constellations, arrangements, and styles started to repeat themselves; we focused on describing and analysing the patterns of the position of people and nature and their interaction in the selfies, which we describe in section five. From this iterative and joint analysis of observing, describing, analysing and discussing

Table 1. Overview of the cases.

Case	Platform	Data collection	Context
#friluftsliv	*Instagram:* a photo- and video-sharing social media platform where uploading was only possible *via* smartphones.[4]	Collection from the open feed; from Feb to June 2021. Used Instagram's collection feature, note-taking, and screenshots.	Through the use of this hashtag, everyone can post and view contents. Use is likely motivated by a desired association with this theme or being identifiable through it.
Outdoor challenge	*Facebook:* a device-independent social media platform with public and private groups. *Instagram:* see above.	Collection from Feb to June 2021, looking back until August 2020. Collection from Facebook group as well as Instagram account and related hashtag. Used Facebook's and Instagrams's collection feature, note-taking, and screenshots.	Use of hashtags (Instagram and Facebook), see above. Participation in the Facebook group appears to be motivated by obtaining an award. As there is little interaction apart from award inquiries and the admin's comments, sharing or "celebrating" experiences is less prominent.
Kayak Rental and Tours	*Tripadvisor:* a crowdsourced platform for reviewing tourist experiences using quantitative ratings as well as comments; a digital "word of mouth" (Jeacle and Carter 2011).	Collection in Feb/Mar 2021 from the six most-reviewed experiences in Sweden related to the search term "kayak." Investigation looking back until 2016. Used note-taking and screenshots.	Reviews include museums, national parks, restaurants, bars, or guided tours, and can include both text and imagery, uploaded by organisations or users. Posting requires an account, and engagement gives people platform-internal points and status distinctions. Each image gives extra points and appears to underline or illustrate some parts of the experience as covered in the review text.

many selfies on the three platforms, we constructed four archetypal, non-exclusive nature/society relationships to summarise and capture traces of the nature/society relationships observable in the selfies. We introduce these in Section 6.

Throughout this process, we followed the ethical guidelines of the Association of Internet Researchers (franzke *et al.* 2020). Concretely, all primary data we collected were publicly available on the Internet; the data collected from Instagram and Facebook were collected through our private accounts on those platforms, using the inbuilt functionalities to save or bookmark content on their service. No primary data were stored or made accessible outside the bounds of these platforms beyond what was necessary for processing and analysis. We do not reproduce any images in this

article because of both copyright and privacy, but have redrawn and thereby anonymised some exemplary selfies in Figure 1. All written language was in Swedish and Norwegian; quotes provided in this article are translated and anonymised, and semi-public or commercial digital spaces will not be named to ensure confidentiality.

For our final question, *could it be otherwise?*, we use additional data: reflections from our own attempts to create different styles of nature selfies, which took inspiration in the tradition of "breaching experiments" (Garfinkel 1984). For a period of six months, we attempted to take what we termed "ugly nature selfies," in order to expose and subvert some of the norms underlying nature selfies which we identified in our research. Following that same thread of curiosity, in autumn 2021 we issued an "Ugly Nature Selfies Challenge," to see what norms and ideas would be challenged by people uninvolved in the research. We created a private Facebook group, invited collaborators and colleagues to take and share "ugly nature selfies" with the group, and posted a few of our own nature selfies to make the group look less empty. We framed the challenge as fun, engaging, and subversive but left it open to participants what they thought was an "ugly nature selfie," which we described as a selfie about "what you would normally not share or what you did not like about your outdoor experience" (the full instructions are reproduced in Appendix B). Including the authors, eighteen people joined our private facebook group, and ten people shared their selfies, with a lot of intriguing selfies subverting even the authors' ideas of "ugly nature selfies." At the end of the two week challenge phase, we facilitated a 90 min long workshop, in which twelve people discussed these "ugly nature selfies" and the underlying norms. Throughout our own experimentation and the challenge, we regularly reflected on impossibilities, struggles, and awkwardness of subverting the norms of nature selfies, and asked our participants to do the same. Our work with ugly nature selfies is not representative for Swedish social media use or selfie-taking, nor is it meant to be. Instead, we used it as a reflexive tool to explore and experience first-hand some of the norms and affordances in nature selfies and their pervasiveness. This explorative workshop and our own selfies provided insights, directions, and reflections that informed the discussion and conclusions of this article.

5. Findings: the nature in nature selfies

Across all cases, we saw faces and bodies or their material extensions, and intermediary objects that related nature and one or more people, including food and drink, tools, equipment, signposts, or kayaks. We also noticed many blurred backgrounds such as landscapes or trees, as well as habitually applied image filters, including modifications of contrasts and colours, in reflection of affordances such as facial recognition and filter-based background blurring, which are built-in filters in Instagram and many smartphone photography apps and appear to be part of platform-specific aesthetics. In Figure 1, we reproduced exemplary selfies from across our three case studies in an adaptation of Instagram's tile overview, to which we refer throughout the article using the associated panel number. In the remainder of this section, we discuss the specifics of the different selfies and cases across our data.

As expected, most of the selfies collected *via #friluftsliv* showed one (panel 1) or more faces, either next to each other (panel 2) or some relegated to the background (panel 3). We also identified couples, groups of friends, parents with children, and whole families. Dogs were frequently displayed (panel 4), and seldom birds and fish
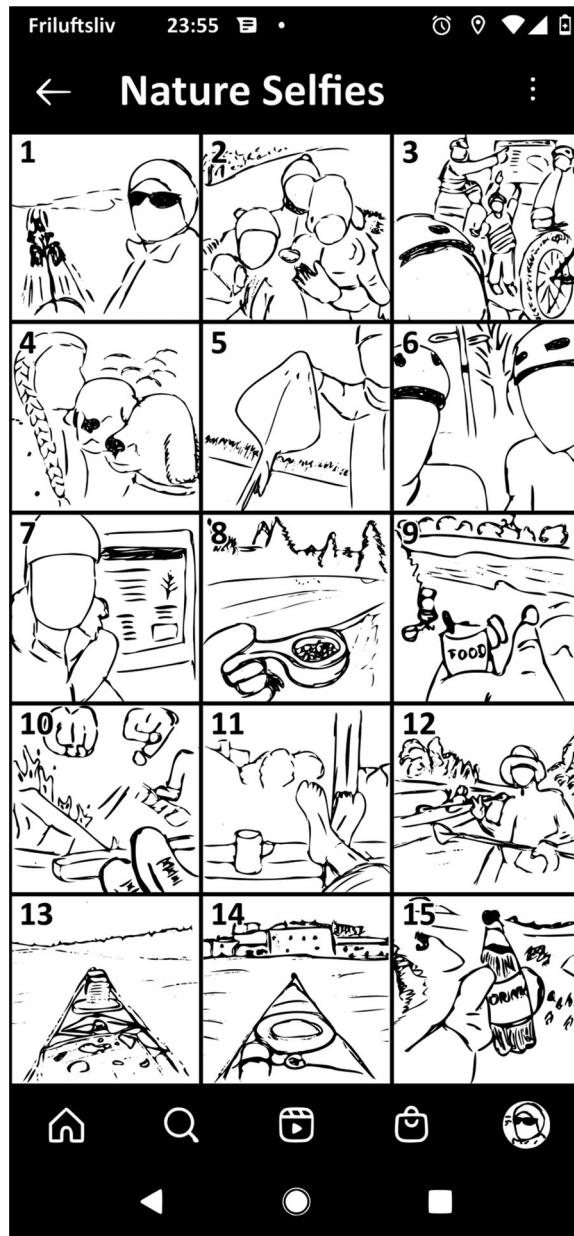
Figure 1. Illustration of 15 selfies found across the case studies, cropped to square excerpts within a grid that could be found in this way in Instagram's smartphone app.

(panel 5). At large, selfies in *#friluftsliv* and the outdoor challenge were similar, but the latter also featured some selfies emphasising human-made outdoor infrastructure: there were many signposts (panel 6) and public maps (panel 7), which related the photographer to a specific location such as a nature reserve. These intermediary objects seemed to function as evidence that the photographer had actually been somewhere, and thus follow a narrative consistent with the platform- and case-specific context.

Besides faces, two other popular motifs were hands and feet/legs. Hand selfies usually showed one of the photographer's hands holding an object, most often drinking containers, but also food and food containers, knives, fishing rods and similar tools, a saw, a lantern, a watch, and several fish. Many of these gadgets or animals were presented for the camera, putting the object into focus. Many also displayed a logo, or the post was accompanied by other hashtags that point to a business or activity being promoted by the photo (see below). In several hand-selfies, the traditional Sámi vessel *guksi* or plastic facsimiles can be seen (panel 8).

The landscape played a subordinate role in most of these selfies: some featured snow as a uniform, white background, and others a few trees, which might enable the viewer to imagine the photographer sitting in a clearing, next to a river (panel 9) or a lake, or occasionally looking out over vast landscapes seemingly untouched by traffic, houses, or other human influences. By contrast, selfies of legs or feet often featured a more impressive or activity-focused backdrop, including resting feet at a campfire (panel 10), with a kayak in sight, or pointing out of an opened tent. In some other hand-and-gadget selfies, we had to infer from the outdoor clothes worn by people in the picture or by accompanying text and hashtags that the photo was related to outdoor pursuits. And one selfie photographed indoors showed a foot resting on a windowsill (panel 11); together with the used hashtag *#friluftsliv*, this appeared like an ironic commentary on the hashtag and outdoor life in general.

Among selfies on Tripadvisor, conventional selfies of faces were uncommon. The few existing ones tended to include more than one person: often smiling, from within the same or another kayak, conveying a sense of comradery and shared adventure (panel 12). More common were images that included body parts or mediated a distinct subject position through outdoor equipment: on the one hand, we found some hands with food and drinks, as well as feet, but on the other hand we also saw selfies taken from the perspective of the photographer with the tip of a kayak in the water. Such selfies were by far the most shared in this case study, and they often involved gear attached to the kayak, such as compass, water bottles, and maps (panel 13). In most of these selfies, the environment took up the largest part of the picture, while face, legs, or equipment functioned as a "pin" in it, positioning the photographer within the environment and adventure. Many of these images appeared to explicitly point at beautiful scenery, including some that targeted a sight such as a castle (panel 14). Unlike other traveller selfies, the absence of a face shifted the message from "I, the photographer, was here" to "this could be you!" We also found this type of kayak selfie in the other two cases.

In both the case of *#friluftsliv* and Tripadvisor, commercial and private experiences blurred. In the case of *#friluftsliv*, it was quite common that descriptions or hashtags included references to manufacturers or stores of outdoor equipment and clothing, but also tourism associations, outdoor campaigns, magazines, or tour operators. And as an analytical lens, each of these hashtags offered different interpretations and analyses. Sometimes branded items such as food and drinks even featured prominently in the selfies (panel 15). The absence of these images in the case of the outdoor challenge points not only to Instagram's central position in influencer culture and the associated advertising business, but also to a different setup of the challenge compared to an organic hashtag-related space. Even though on Tripadvisor both travellers and rated businesses can upload images, we were surprised to see that businesses also uploaded selfies as part of their promotional material. In most cases those kayak selfies were

again taken from the photographer's point of view, thereby underscoring the universality of the experience. However, selfies uploaded by businesses often appeared edited and slicker-looking than the selfies of regular visitors, possibly due to different, non-smartphone hardware and post-production efforts.

6. Analysis: nature/society relationships

From our empirical material we constructed four types of nature/society relationships. These four relationships, which we call (1) marking; (2) performing; (3) conquering; and (4) promoting, are summarised in Table 2 and overlap or intersect in some selfies.

First, selfies mark a location and place the photographer simultaneously within nature experiences and online environments (see e.g. panels 3, 6, 14). Similar to the writing on stones and trees, a nature selfie aided by timestamps and geo-tagging marks where the photographer has been. As such, a nature selfie lends credibility to an experience and the photographer's involvement in it. For example, the background—recognisable or not—in a generic, face-centric selfie, marks the photographer's presence in digital space as much as in the outdoor environment. Co-located text and visual markers draw attention to anticipated or past performance or experience (see the following paragraph). And in the case of the outdoor challenge where landmarks may not be as universally recognisable, there are instead selfies with maps and signposts to locate the photographer. Many selfies also imply solitude, "composed to erase all signs of human presence" (Kohn 2018, 2) and thereby position nature as a beautiful and uninhabited spectacle, where strangers are absent whilst civilization is hidden or distant. In the case of kayak selfies, this co-location of marking untouched nature and the photographer's presence displayed in a nearly full-screen image happens through the

Table 2. Four nature/society relationships identified in the three cases; elements listed in one case may also be found in other cases.

	#*friluftsliv* on Instagram	Outdoor challenge	Kayak rentals/Tours on Tripadvisor	Examples of enabling affordances[5]
Marking	Nature not at centre stage, but as a backdrop to people's activities	Nature experiences need to be evidenced and portrayed authentically	Nature as an uninhabited spectacle	Geo-tagging, timestamps, display size
Performing	Nature as a space for activity or adventure	Nature as the setting of an activity	Nature as the setting of an activity	Portrait modes, background blurring
Conquering	Nature as a place names that can be visited and ticked off a "bucket list"	Nature experiences as something that can be counted and certified	Nature as a challenge to overcome	social recognition, commenting
Promoting	Nature as a stage for communicating about brands and products through imagery and text	Nature as a tourist and recreational highlight	Nature as a commodifiable experience, with selfies also used by commercial actors	Tagging of other users, social recognition, difficulty to see commercial intent

tip of the kayak. Showing it, transforms the way nature is imagined from a picturesque surrounding to an immersive experience.

Second, selfies appear performance-oriented, such as in the outdoor challenge where sharing of selfies contributes to achievement (see e.g. panels 2, 4, 5). This pattern repeats throughout the data: outdoor photos shared using *#friluftsliv* on Instagram foreground activity, adventure and achievements. People are skiing, fishing, walking with children or dogs, or are about to embark on a hike or a run. Sometimes the images explicitly depict these activities, or they are hinted at in the accompanying texts and hashtags. Selfies with the tip of the kayak pin audience into the photographers perspective: without the tip of the kayak, this would be a rather boring picture of water surface and horizon, and might have never been taken in the first place—the addition of the tip of the kayak provides the kayaker's point of view. From this perspective, the stage of the activity becomes visible as distance, mist, or waves contextualise any achievements. When selfies portray nature as a performance-oriented activity, it becomes applaudable and thus shareable on social media.

Third, when selfies are staged as performance-oriented and furthermore display a struggle, nature is easily reduced to something to be explored and conquered (see e.g. panels 1, 13). Concretely, these selfies suggest that, in nature, endurance is needed and challenges need to be overcome. Gear is often depicted to aid in this effort as selfies do not tend to show smiling faces and blue sky—making them appear less staged. Feet in a sleeping bag in the snow suggest that suffering is possible, as do selfies with frozen beards or eyebrows. A selfie depicting the tip of the kayak in high waves and mist makes kayaking a challenge, whilst equipment mounted on a kayak such as compasses or maps suggest that a trip requires navigation skills. As selfies of such experiences and challenges—but also the potential of beauty—are geolocated, the place itself is turned into a spectacle and commodified through the increased attention a selfie delivers. The overall setup of the outdoor challenge—to visit, count, and list nature reserves that people visited alongside uploading photos—also relies on the endurance of participants whilst challenges are more diffuse. We also observe the commodification of outdoor experiences into a box-ticking exercise in frequent comments that simply ask "Where?" In this context the question appears to say: "This looks impressive/ exciting/challenging, I would like to have the same experience/picture, can you guide me to it?" While this may also be related to *marking* or *performing* nature selfies, we interpret the comment as exhibiting the commentator's endurance and eagerness to explore. Consequently, when outdoor experiences are transformed into a box-ticking exercise, specific locations in nature become popularised, potentially damaging ecosystems, for example through increased erosion, noise, or littering.

Finally, alongside the commodification of experience and space to generate attention, in particular our case exploring *#friluftsliv* on Instagram shows how nature serves as a backdrop for selling products and services (see e.g. panels 9, 14, 15). This likely reflects that the platform became a commercialised space where branding is the norm. While nature selfies showing faces appear overall less commercial, advertising for products or services happens regularly in hand and foot selfies on *#friluftsliv*. When companies or organisations are tagged, it is often unclear if someone is paid for promoting a product, if people like their gear and want others to know, or if people hope to get more reach by adding more hashtags. In the other two cases, experiences are emphasised more than products. This happens either through introducing symbolic significance and social recognition for visiting local nature reserves and national parks, or

by commercial actors whose use of selfies can be interpreted as an attempt to inspire people to engage with the nature accessible through their rental kayaks.

7. Discussion: the (im)possibility of different nature/society relationships in selfies

In our study, the nature that emerged through selfies was homogeneous: A curated, polished, and especially on Instagram, filtered, high-contrast version of nature, which served to present the photographer in an idealised, stunning, unpopulated wilderness where the few signs of a distant civilisation might be maps, signposts, paths, or planks over the bogs. As we outlined, nature in nature selfies appears as a place to present yourself in, to perform in, to conquer, or to promote something—all enabled and maintained by specific platform affordances. Not only promotion, but also a focus on intermediary objects such as gear, the challenges faced, or that photographers appear to "consume nature as a big coulisse and arena for their recreation and sport activities," illustrate Gelter's (2000, 82) critique of *friluftsliv* as increasingly commercialised, and with little interest for connection to nature itself. Accordingly, selfies and platforms co-create and reinforce needs for "that" view that people want to be seen in and "more stunning" or "more challenging" nature as part of outdoor recreation lifestyles. As expected, nature selfies are also a stage for the performance of the self (e.g. Marwick 2015).

We consider the nature/society relationships afforded through nature selfies as problematic: on the one hand, they hide almost all human interaction with nature and idealise nature as pristine. On the other hand, nature selfies commodify nature as part of individuals' identity work, in order to generate more attention, or as a backdrop to other economic exchanges. Within the observed cases, then, nature is the stage for a specific community to present the "good self" in "beautiful nature." Conversely, alternative depictions of nature/society relationships in selfies might display and consider nature's less photogenic aspects or position it as something invariably intertwined with society. These more realistic depictions could enable viewers to connect to the photographed place rather than the mediatised moment of a "good outdoor experience," and the "perfect selfie spot." But most platforms make nuanced engagement with the place behind the picture difficult. As we discuss in the following paragraphs, the context of the attention economy on multi-sided platforms makes it difficult for viewers to consider the place behind the picture, and for the photographer to provide a nuanced and unspectacular account of connection to nature which is created without considering future attention.

After creating and analysing the data from our three cases, we specifically experimented with taking selfies that could (re)present the imperfect, destructive, or populated nature experiences of our (sub-)urban lives. We composed images with ordinary, possibly monotonous nature with and without using image filters that would not normally attract attention online; we incorporated alternatively extraordinary motifs in our selfies, including the "ugly" (i.e. not pristine) parts of outdoor recreation, such as felled trees, rubbish, but also wind turbines, motorways, or other peri-urban infrastructure; we experimented with facial expressions, angles, perspectives, filters, and the lack thereof; we all felt that our images had to be exciting enough to be shared and thus included a somewhat activist message. Our selfies should be stunning, but with a glitch. Our faces, looking away from the issues we wanted to highlight, served as

evidence in our non-connectedness with nature. Even within our small trial, we carefully considered the attention of others: A picture of an ordinary but tidy peri-urban forest or field without people or infrastructure on a grey afternoon and without using image filters seemed unworthy to ask others to "like," which, as the literature suggests, is the main reason to share selfies (cf. Liu 2021; Pounders, Kowalczyk, and Stowers 2016).

With the same curiosities, we issued an "Ugly Nature Selfies Challenge" to see how others would challenge the norms of nature selfies. The submitted selfies exhibited a diversity of subversive possibilities, including a selfie with a chainsaw in front of a felled tree, a selfie of someone lying in a green driveway, and selfies with plastic plants or composting containers. The discussion in the workshop was marked by confusion: we found that a deviation from the norm made many other meanings unstable, among others reflected in discussions around the terms "ugly" and "nature," from whose perspective ugliness was determined, and how human interventions in nature should be evaluated. As anticipated based on the literature review, the tendency to read and interpret selfies positively (Souza *et al.* 2015) made it difficult to identify the "ugly" and instead we tried to find the "beautiful" or an activist message, even when it was not intended to be there (cf. Carr and Milstein 2021). Accordingly, both in the challenge and in our data we found it nearly impossible to identify a "bad" outdoor experience in selfies: for example, a kayak selfie in the fog quickly turned into a challenge (see the kayaking case), and a selfie with a chainsaw in front of a felled tree still signalled achievement (see earlier in this paragraph).

We had framed this intervention as a challenge, imitating a typical way of engaging people on social media (Burgess, Miller, and Moore 2018). Even though participation was limited to colleagues, the pervasive logic of the challenge made us promise excitement and contribution to some undefined "greater good." As part of the challenge, we shared our own experimental imagery with the intention of creating engagement, and we "liked" and commented on participants' submissions to reward them for their efforts. A challenge inherently inserts a goal into the pursuit of outdoor experiences, making it an instance of postmodern *friluftsliv* (see Gelter 2000) where connection is sought with distant others instead of with nature. Arguably, even selfies not shared on social media likely aim to connect the present moment with others or a future self.

The prominent feature of gamification through challenges and platform affordances (Hristova *et al.* 2020) is also prominent in our three cases. Enabled by platform affordances, each of the cases amplified engagement and thus attention through specific rules: Tripadvisor's point system rewards people for uploading images such as selfies, in turn making tour and rental outlets more trustworthy and visible. The outdoor challenge was explicitly framed as a challenge, making participants hold themselves accountable to reach a goal and thereby prolonging engagement with the platform. Also, when uploading content as part of organic hashtags, users want engagement. While selfies generally lead to more interaction than other pictures (Souza *et al.* 2015), including hashtags such as *#friluftsliv* in an Instagram post creates and increases an audience of corporate and individual strangers with the intention of gaining more "likes" and "followers." Nature selfies thus render nature as the "big coulisse and arena" (Gelter 2000, 82) to people's "likeable" participation in both outdoor recreation and related online communities. As our cases were firmly embedded within the attention economy, all participation in these needs to be interpreted in the platforms' pursuit

to maximise attention, participation, and thus revenue (Hristova *et al.* 2020; Zulli 2018).

Another issue we identified in our "ugly nature selfie" experiment was managing our own attention: we constantly engaged with the homogenisation of motifs which can also be found on social media platforms. Once we had something we liked, we started experimenting and doing more of this. At the same time, we challenged each other to find ever more places and ways to interpret and take ugly nature selfies. Just like the selfies that motivated questions of "Where?" described in our analysis section above, we also discussed locations and seldom took selfies in places that might be difficult to recognise (exceptions were close-up selfies with trash or roadkill). When sharing, we tried to focus on short texts, considering an image less useful if it needed explanation because of the short attention cycle encouraged by the platforms, while at the same time reflecting upon the difference a text needed to make to escape the looming interpretation as "beautiful with a glitch." Nevertheless, many selfies that we and our participants took and shared as part of our challenge maintained and kept prominent an idealised nature without bringing us closer to the *friluftsliv* ideals of connectedness and participation (see Gelter 2000). Instead, we marked idealised nature by absence, for example through a selfie in front of a heron in a pond made of concrete, or a selfie in front of wood offcuts in a nature reserve. If this was "ugly," nature ideally needed to be untouched. By seeking to break the norms of nature selfies, we made them visible without being able to offer alternative nature/society relationships.

Attention management is also something we could observe in our cases. Instagram, for example, manages the glance (Zulli 2018) in its tiled overviews (see Figure 1 above), where reading accompanying text requires the same effort as "liking" something. Albeit not managing attention through peer-to-peer interaction like social media platforms, imagery on Tripadvisor can also obtain a privileged position. In the image gallery—an affordance of the platform—any associated detailed reviews related to a rental outlet are omitted. Any of these platforms invite immediate engagement that only halts at the most stunning, attention-grabbing elements to drop an actual or—when not logged in—imagined "like," "heart," or "thumbs up" to a post or a selfie—before proceeding with booking an activity or scrolling further. The affordances that in other contexts lead to polarisation (Williams *et al.* 2015) here lead to homogenisation: Content with high engagement is amplified by the platform, leading to even more engagement. Such popular content is then reproduced and amplified by other users—including by commercial enterprises as part of "synthetic personalisation" (Fairclough 2001)—in the hope of attracting a similarly large audience. This mechanism of reproduction leads to recognisable locations and photo styles (Arts *et al.* 2021a)—such as hand, foot, or kayak selfies—as well as to homogenised activities and ways of conceptualising nature/society relationships. The quick glance at many relatively homogeneous images, for example in a tile view, shapes what the viewer wants to be seen doing, having, and sharing (Liu 2021): a commercialised *friluftsliv,* where viewers can "consume" ever more nature from the "bucket list" while showing off a new backpack, following in someone else's footsteps, and overcoming challenges. Only what fits into this canonised "extraordinariness" is acknowledged and gets attention; and attention is what counts for publicly active participants in social media. However, while the context of the attention economy might be novel, the underlying motifs and discourses represent older narratives of a *friluftsliv* that had long been commercialised (see Gelter 2000).

While the identified nature/society relationships depend on "beautiful" nature selfies, to our frustration and surprise our "ugly nature selfies" integrated and reproduced varieties of these identified nature/society relationships. This is significant, because it has implications for which actions are enabled and which ones are constrained. To explain: based on our experiments, we suggest that a subversion of these "beauty" norms is plausible within the confinements of the attention economy, and can be achieved by creating a community with their own ideas of an "ugly" nature selfie and a reward system that maintains this. Models for this can be found in participatory online campaigns (e.g. Katz-Kimchi and Manosevitch 2015) and movements (e.g. Wood 2021) that use existing algorithmic incentive structures for their cause. Models may also be found in other platforms and communities, such as online biodiversity citizen science where people observe, identify, and report species. While largely working on their own, people interact with others related to identification (also on other social media platforms), peer validation, or the reported data (Ekström 2022). However, any such community would not be able to to meet the ideals of a *genuine friluftsliv* which emphasises connection and participation (see Gelter 2000), but instead it would encourage people in their identity performance as reproduced through the meaning attributed to affordances of likes, shares, and comments by their peers—or alternatively by engaging with affordances such as list of species sightings or "white spots on a map" that some people want to populate (Ekström 2022, 257). This identity might lean towards one of "a diligent activist" or "a diligent citizen scientist" instead of "an adventurous traveller," but supported by attention economy and platform affordances nature also here remains a consumable backdrop to an identity performance. Overall then, as Koot and Fletcher observed, initiatives promoting alternative nature/-society relationships risk to "not support empowering collective action, but instead depoliticize and commodify environmental activism" (2020, 287).

8.   Conclusion

In this article, we investigated nature selfies in the context of *friluftsliv* and three multi-sided platforms to explore how they relate nature and people, which relationships they consequently afford, and if selfies could be otherwise—that is, if alternative digitally-mediated nature/society relationships could plausibly display different relationships to nature. Within our three cases, we identified four nature/society relationships afforded by nature selfies and platform affordances, which influence and are influenced by existing ideas of engagement in outdoor recreation. These relationships are: (1) *marking*, whereby selfies locate people in a specific, potentially recognisable outdoor space; (2) *performing*, whereby selfies show people participating in outdoor activities; (3) *conquering*, whereby selfies support the rendering of nature as a challenge to master, possibly on a bucket list; and (4) *promoting,* whereby selfies commodify nature as part of commercial activities.

We inquired how attention economy and platform affordances shape how nature selfies are shared and thus produce and reproduce ideas of what "nature" is supposed to be seen as within the involved communities, and by extension during outdoor activities. We attempted to use these insights to challenge the identified norms of nature selfies and the limitations of platform affordances and attention economy by experimenting with what we called "ugly nature selfies." In this process, we noticed that the

impact of platform affordances and attention economy persisted, which made subversion difficult.

Throughout the article, we show the role of multi-sided platforms and how they are part of shared meaning-making about the environment. These impact not only nature/society relationships afforded through nature selfies; instead, through interaction of people and platforms general "grammars" emerge, which normalise certain ideas and expressions—for example about the environment. As multi-sided platforms aim to maximise the time that people spend interacting with their content by directing and continually engaging their attention, we conclude that nature/society relationships are thus not only shaped by local historic ideas, for example of *friluftsliv*, but are increasingly co-constituted by technology, nature, and people entangled in global digital platforms.

Notes

1. We furthermore refer to "nature/society relationships" using the slash as a symbol for division in "nature/culture," thereby engaging with separation and difference of nature and society (Inglis and Bone 2006).
2. Both concepts also exist throughout Scandinavia, albeit with slightly different connotations; see e.g. Gurholt and Haukeland (2019) on *friluftsliv* compared across Norway, Sweden and Denmark. Furthermore, the indigenous populations of the European Arctic, the *Sámi*, have their own ways of relating to nature (e.g. Elenius, Allard, and Sandström 2016).
3. In general, multi-sided platforms optimise content shown to users to keep them on the platform for longer or make them return. This includes that content is shown based on overall popularity, personalisation, or localisation—these specifics, as well as what "popularity" is (e.g. ratings, likes), differ amongst platforms.
4. After the end of the study period, in October 2021, Instagram officially enabled posting from desktops. Before that, phones needed to be emulated or images transferred to a phone in order to be uploaded to *Instagram*.
5. Platform affordances here exclude text and hashtags as they are relevant throughout.
6. As stored on archive.org: https://web.archive.org/web/20210904180544/https://about.instagram.com/features

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Appendix A. Case and context descriptions

Open topic #friluftsliv *on Instagram*

Instagram is one of the world's leading social media platforms. It began as a mobile photo sharing application, but now also affords other ways of communicating, such as videos or peer-to-peer messaging. The smartphone application is specifically designed to make it as easy as possible for users to upload selfies as it seamlessly connects to built-in cameras. Indeed, the platform describes its features[6] as supporting ways "to express yourself and connect with the people you love," for example by "post[ing] moments from your everyday life." A registered Instagram user can "follow" other users' accounts as well as hashtags. By doing so, that user will be met with a feed of images and videos uploaded by users and hashtags they have "followed," as well as "sponsored" or "promoted" posts, and advertisements. As users interact

with content by liking, bookmarking, searching for, and commenting on posts, the sponsored posts and advertisements become more targeted to their tastes through Instagram's machine learning algorithm.

We collected material from the organic (i.e. not orchestrated) hashtag *#friluftsliv*, which we observed from February to June of 2021. The hashtag is used by a variety of Instagram users, including non-commercial, private users and a number of different commercial users, such as influencers, local businesses, and global brands. As the Swedish and Norwegian word *friluftsliv* is identical, the hashtag is used in both contexts. Sometimes it is used together with texts and/or hashtags in other languages, but the image displayed locates the user either in Norway or in Sweden at that time. Very occasionally it also appears in non-Nordic contexts and rarely in what looks like "spam," i.e. the use of a popular hashtag in an unrelated post to attract a wider audience.

Outdoor challenge across platforms

The next case we observed was an initiative formed in Sweden in the summer of 2020 "with focus on *friluftsliv* and nature photography" and is framed especially in response to the Covid-19 pandemic "to promote public health and inspire people to visit the country's nature reserves" (quotes from their Facebook group, translated). This challenge called "Classics of Swedish *friluftsliv*" has a presence on Facebook and Instagram, as well as a separate website. Practically, the initiative's presence across media platforms focused on two elements: on the one hand there were regular photo competitions in response to which a hierarchy of best photos was established; on the other hand, people could apply for awards based on specific challenges, such as the amount of nature reserves and national parks they had visited.

The main focus of the fieldwork was a Facebook group to which anyone could apply for access. The first sentence of the group description reads: "Now begins the challenge for everyone to find and share their own outdoor classics." In this group, users can not only ask questions, but more importantly, they are encouraged to share imagery of places that they have visited; the administrator awards a digital certificate when users profess to have visited a certain number of nature reserves or national parks. This can be done in the Facebook group or on the website. While it is not explicitly required, participants who wish to receive the certificate usually share a set of pictures which give an illustration of the places they have visited. Many of these submissions include at least one selfie. In February 2021, we observed this initiative retroactively since its inception and continued to observe the initiative until June 2021.

Kayak rental and tours on Tripadvisor

Tripadvisor is an online travel forum, best known for its ratings and reviews of businesses, such as accommodation, restaurants, or rental outlets, which travellers can contribute to with text and images. Personal recommendations have always been important for the tourist industry and Tripadvisor offers an electronic version of this powerful "word of mouth". For businesses, Tripadvisor can be an important part of a marketing strategy, while travellers can identify the next travel destination or restaurant based on the "highest-rated" experience. To share a review, travellers need to have an account, but unlike in the other two cases, an account is not required to view the content. In return for reviewing a business, users receive status distinctions, including a certain number of platform-internal points that may transfer into "badges." Reviewers receive extra points for posting images; these images appear to underline or illustrate some parts of the experience as covered in the review text.

On Tripadvisor, we specifically investigated kayaking experiences, for which we considered images uploaded both as part of user reviews and as promotional material by the companies, as both seamlessly integrate on the platform. Kayaking tours and rental are offered throughout the country, as kayaking is a popular Swedish outdoor activity and closely related to *friluftsliv*. We

investigated selfies uploaded in relation to the six most-reviewed kayak experiences in Sweden. Tripadvisor might not seem like the most intuitive platform to upload a selfie, as it is less about the person and more about the evaluation of an experience. Nevertheless, there are selfies in positive reviews, but not in the rare negative reviews. In comparison to the other two cases, selfies are less prominent among the total number of pictures. Still, selfies are used, and serve to present the review as personal and relatable. We collected data from Tripadvisor in February and March of 2021, and analysed all selfies of the 6 kayak experiences that had been uploaded until then.

Appendix B. Ugly nature selfies challenge

TL;DR: Start posting whatever you think is an ugly nature selfie! We would like the aggregated results for our research, but won't publish or reproduce individual pictures without explicit permission.

[Project] challenges you! Can you take ugly nature selfies? Through our research we found that nature selfies on social media highlight beautiful nature, but hide "ugly" nature and/or human impact on the environment, such as litter, logging, or infrastructure. Join us to hack the nature selfie! We will discuss results, impressions, and reflections during the [workshop].

How to participate?

1. *Take ugly nature selfies!* When you are out on your next walk, hike, bike ride, swim, camping trip, or similar, think about how you would share this experience with your friends and family. But what was not so good or "beautiful" about your experience in nature? Capture what you would normally not share or what you did not like about your outdoor experience in a selfie! After all, it was part of your trip!
2. *Share your pictures* in this facebook group. It is set up specifically for participants of the [workshop].
3. *[optional]* If you feel up for it, you may also want to share your selfies on a social media stream of your choice. We suggest the hashtags *#faceit #friluftsliv #friluftslivnofilter*. If you like, feel free to take the challenge one step further and nominate others to take the ugly nature selfies challenge. However, please do not invite others to the [workshop]-specific facebook group.
4. Reflect on how you described/tagged the picture when sharing it on social media, or think about how you would do that if you were to share it. How would you expect your network to react? What would it mean to leave this selfie uncommented?
5. *Join our reflection session on [date]* during the [workshop]. You are invited to join even if you have not taken or shared ugly nature selfies, of course.

Background

Why ugly nature selfies? Both selfies and nature photography are excessively beautiful. Even when they are not, we try to interpret them as such. Based on our research, we believe that basically all nature selfies on social media highlight "beauty" whilst silencing human impact on the environment, both everyday and commercial Inspired by Harold Garfinkel's famous breaching experiments, with this challenge we want to, first, explore social norms and habits involved in the making and sharing of nature selfies, and second, see what it takes for ugly nature selfies to break this unrealistic—and potentially harmful—perpetuation of the only-ever-beautiful outdoors.

Why do we do this? Instructions on how to produce the perfectly beautiful nature selfie abound, but there are no guidelines on how to make an ugly nature selfie. One of the outcomes of this workshop will be to come up with a better understanding of how to go about, what to

expect and aim for. Another outcome will be to engage with the norms of social media and the anxieties involved in breaching them.

The prize? Everyone wins! We hope that you will deeply engage with our own insecurities and anxieties about how we and others on social media perceive ourselves, nature, and our valuable #friluftsliv time.

The small print: With this challenge we hope to inform our research. By participating you agree that [project] may use your input—images, posts, comments, participation in the workshop—as part of ongoing research which may include sharing your contributions during the workshop. After the workshop, we will anonymise the generated data (screenshots, selfies, text, workshop recording) and will discuss the selfies only on an aggregate level. Please indicate clearly if you don't want this to happen with your contribution. Furthermore, if your imagery includes faces of others, either make them unidentifiable or ask these people for permission. We will not share personally identifiable data outside our small research project and we will ask for additional permission should we intend to reproduce any imagery you have uploaded.