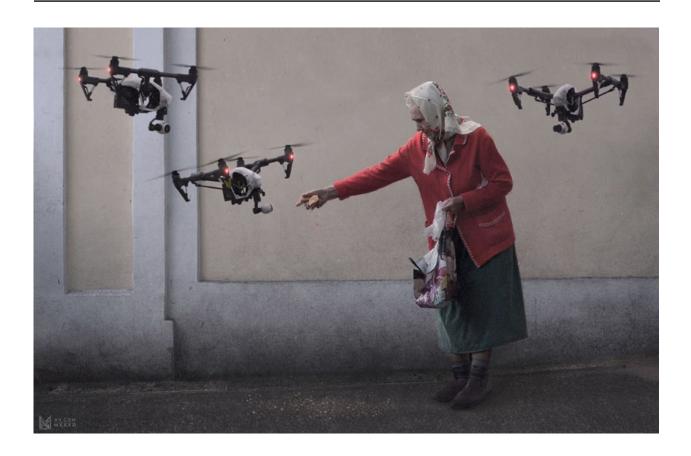## Essay | A Flock of Rogue Drones

Hille Koskela

University of Turku, Finland
hille.koskela@utu.fi

Liisa A. Mäkinen

University of Turku, Finland
liisa.a.makinen@utu.fi

Thomas Behrndt

University of Turku, Finland
thomas.behrndt@utu.fi

Have you heard the story of the old woman feeding breadcrumbs to drones? Evgeny Zubkov depicted her in his artwork titled *Russia 2046*. The artist does not mention the woman's name, but let us call her Natalija Navalnaja (Наталья Навальная).

Natalija Navalnaja was born in the Soviet Union in 1964 as the youngest daughter in a family of seven children. Life was modest during Soviet times, but Natalija felt lucky for her family to be part of a kolkhoz. Kolkhoz was the name of the collective farming communities in the socialized farm sector of the USSR,

and by being part of one, Natalija's family was allowed to own a few chickens. Those chickens, with their eggs and meat, provided an important addition to Natalija's family's dinner table—but for Natalija, they meant more. They provided her with companionship.

Pets, as such, were rare in the Soviet Union as it was either difficult or impossible for private households to keep them. However, as the state regulated the price of bread, keeping it extremely low, it was a common habit to feed birds with breadcrumbs. Birds were like collective pets, belonging to all and no one at the same time. Natalija saved pieces of her own bread to feed not only the family's chickens but also wild birds. As years passed, Natalija grew older, and societal structures changed, but Natalija's love for birds never left her. In post-Soviet times, the poor became poorer and the rich became richer. Even though Natalija was among the very poor, she kept saving the little money she had to buy bread to keep feeding birds.

Around 2030, something odd happened. Birds, which were so numerous before, suddenly started to disappear from the small village where Natalija lived. Natalija noticed that, at the places she visited to feed the birds for years, they just stopped showing. Many of the birds she had names for. Over the years, Natalija was used to single birds she got to know no longer coming, but this only happened occasionally, and there were always new ones joining in, for instance in every Spring when the birds brought their offspring. That was the circle of life, she thought. The fact then that these disappearances happened so abruptly saddened her deeply. At first, no explanation was found. It was like the mysterious decline in insect populations that had already started in the twentieth century. However, when ornithologists started to examine the phenomenon, they noticed that where once flocks of birds had nested, now aggressive quadcopter-like drones were humming and circling in the air.

***

Since the 1990s, drones were commonly deployed in most parts of the globe, including in Russia. Early drones, however, mainly served military and surveillance purposes. Later in the 2010s, they had also become common for commercial uses and for private citizens' recreational purposes. While in many countries, the use of drones has been tightly regulated and, more importantly, enforced, Russia and other parts of the East seemed like the Wild West. It was not mandatory to register drones or to notify when and where they were operated. Drone technology and its regulation, like so much else in Russia, was left to a state of neglect. Drones were sold online, and it was not that uncommon to hear of them being used by jealous spouses or by bickering neighbors or even for the monitoring of complete strangers for voyeuristic purposes. GPS jammers, hindering the operation of drones in their airspace, had been used by Russian authorities, mainly for strategic and defense purposes, often to secure specific areas. There were also fears, however, about unregulated uses and the government warned about so-called "radio hooligans and terrorists," as a jammer could be built with very low costs.

Natalija's village was located not far from a presidential retreat, a luxury hideaway where the country's leader spent his free time. The surrounding area was declared a high-security site. Measures included a safe zone of about twenty kilometers (equivalent to about twelve miles) with operational GPS jammers. The presidential mansion was surrounded by vast and bountiful crop fields, which suffered from flocks of birds, greatly affecting the harvest of local farmers. To address this problem, in the late 2020s, the idea was brought up to use drones to scare off the birds. This, however, required a solution regarding the GPS jammers in place. For this reason, more autonomous drones needed to be developed, drones that were able to select targets and perform tasks independently without a constant human operator controlling them.

In the late 2020s, a classified governmental operation was initiated. People in authority envisioned a wider application of this technology outside of this specific purpose. The drones, or rather the underlying AI, was trained to mimic the behavior of predatory birds by recognizing their patterns. This approach, provided later, also allowed drones to learn from observation data. The drones adapted quickly to their new environment. Their behavior in mimicking birds of prey was so accurate that, in many ways, they themselves became the birds they were mimicking. They successfully seized the spaces formerly inhabited by "real" birds. In this

eco-system, the drones were faster and stronger than everything else, and as they were powered by solar energy, they did not even have to return to refuel; it was only on occasion they needed to return to the home station.

Soon after launch, however, it became apparent that something had not gone according to plan. After some weeks, the drones stopped returning to the programming site, and they became nonresponsive to the call back signals. With the chaotic changes in the country's leadership in the beginning of the 2030s, the documents regarding the flock of drones mysteriously vanished, as did the people in charge as well as the engineers. And as time passed, these drones were forgotten even by those involved in the original project. One could call this fitting, as drones are often regarded as something disposable. Drones were originally designed to perform tasks deemed too "dull, dirty, or dangerous" for humans. And like their namesake the male bee, they were and still are expected to give their life fulfilling their cause.

<div align="center">***</div>

After the birds stopped coming to their regular feeding places, Natalija sometimes wondered if she had noticed any change in the birds' behavior. Before long, Natalija had all the extra bread but no one to give it to. Natalija had seen many changes in her life—political, economic, technological, and social—but had remained calm and almost detached from them. Local and global changes went past her as decades passed by. Birds, while by definition mobile and fleeting, were the only continuous fixture in her life. The one thing that did not change and the only one that really mattered to her. This sudden disappearance of birds was a change she could not quite understand or accept. As a force of habit, Natalija still visited the places where she used to feed birds and, even with the birds gone, she continued to leave bread there. Then, one day, there were the drones. And Natalija fed them.

Research Statement

This story of Natalija is inspired by Evgeny Zubkov's artwork titled *Russia 2046*. The piece depicts an old woman feeding breadcrumbs to drones. We imagine that where the drones are now, there once were birds. What are the relations of these various actors and how can we understand this change? For us, the image of Natalija encapsulates the relationships we as humans can form with non-living creatures, the spaces we share and the practices we engage in. Furthermore, it brings into question the separation lines of post-human and non-human life in an age of learning machines. This story as a whole depicts a future where technologies, in this case self-adapting drones, are introduced into an environment but, as time passes, are left to a state of neglect. In the story, the devices learn to interact with their surroundings, leading to contact and interaction between drones and human. While the story is imaginative, there are several reference points to surveillance research, particularly to questions relating to space/place (how is space under surveillance being produced?), agency (what kind of agency surveillance enables or supports; how is surveillance perceived by the user/target?), and technology (what are the varying contextual roles surveillance techniques are able to take?).

The story builds on the argument that surveillance shapes both people and space, and vice versa. Our previous work has investigated how "space under surveillance" is formed and how surveillance produces a new kind of space, particularly in relation to power structures and human emotions. In contextual understandings of space, these two are intrinsically bound, as surveillance practices build on power-relations but also have an emotional effect on the subject. This emotional effect can be quite ambivalent, as being under surveillance can evoke both positive and negative feelings at the same time. (Koskela 2000, 2003; Mäkinen 2016)

In the story, Natalija's attachment to the places where she fed birds was created through repeated practice—this is how the places were filled with meaning. Without the birds, essential aspects of this meaning were lost. Still, Natalija returned to these places, leaving bread, but without anything or anyone to interact with. Later, when the drones appeared, they came to fill this voided space, bringing new meaning there.

While drones, in general, have come to serve many functions, much of the critical scholarly engagement with them is centered around their sensory capabilities, seeing or vision, and is closely linked to the militaristic application for which they were developed. In our story, observation was not the main objective of the drones, but it was how they were able to meet their goal of scaring off smaller birds from the fields. Over time, however, the drones came to exceed this clearly defined role—serving as a reminder that things exist in a multitude of contexts. The central theme, then, is that the drones cannot be reduced to any one purpose and, in fact, can be re-imagined in a variety of ways.

Zubkov's artwork and our story can aid in re-examining connections between surveillance, space, and emotions as, in this setting, surveillance is not executed from a distance but is tangibly within "arm's length." This story contributes to the argument that, as surveillance devices (such as drones, but also mobile phones, wearables, and even smart homes) are immersed into the everyday practices of people, we need a new conceptual understanding of not only "surveillance space" but also the emotions and subjectivities of those surveilled, and the new and often complex human-technology interaction and even relationships formed in the context of surveillance.

Finally, the story leaves us with some important, unanswered questions and ethical dilemmas regarding human-machine relationships and the possibilities of self-learning machines. The many problems, not only technical and legal but also ethico-political in nature, that arise in relation to self-learning AI are shown in contexts ranging from surgical robots to self-driving cars to drone warfare. As these challenges are for the most part still unknown or unacknowledged, further interdisciplinary research is direly needed.

References

Koskela, Hille. 2000. "The Gaze without Eyes": Video Surveillance and the Changing Nature of Urban Space. *Progress in Human Geography* 24 (2): 243–265.

———. 2003. Webcams, TV Shows and Mobile Phones: Empowering Exhibitionism. *Surveillance & Society* 2 (2/3): 199–215.

Mäkinen, Liisa A. 2016. Surveillance On/Off: Examining Home Surveillance Systems from the User's Perspective. *Surveillance & Society* 14 (1): 59–77.