Spot the Miner: Do Clothes Really Make the (Wo)man?

Svetlana Sokolova

1. Introduction

"Completely black, coal-stained faces that have not been washed for weeks, rags of all possible colors and types… all this got mixed up in a varied, bustling, clamorous mass".[1] This picture of a mine opens Aleksandr Kuprin's short story "In the Bowels of the Earth" (1899), one of the first artistic descriptions of mining in Russian literature. Kuprin was greatly influenced by the works of Russian essay masters such as Nikolai Pomyalovsky, Vladimir Korolenko, and Gleb Uspensky. Uspensky's cycle of essays "Letters from the Road" (1889) served as an inspiration for Kuprin's essays like "Yuzovsky Plant" (1896), "In the Main Mine" (1899), "On Fire" (1899), as well as the fictive "Molokh" (1896) and "In the Bowels of the Earth" (1899) that are enriched with essay-like details. The opening of the latter story presents miners as a black clamorous mass, accompanied by "exquisitely ugly aimless swearing interspersed with a hoarse laughter and a choking, convulsive, drunken cough", which sharply contrasts with the peacefulness of the steppe morning.

How different is today's perception of miners from those of the past centuries as represented by the above quote from Kuprin? Is it the clothes and the black charcoal stains on one's face that make a miner or are there other traces that indicate one's belonging to this line of work?

The present article is interdisciplinary and incorporates aspects of art history, social studies and psychology into an artistic project. In this project I invite the viewers to test their perception of miners based on a series of charcoal portraits, drawn by me and representing men and women dressed in mining workwear and everyday clothes. Who in this mini-gallery is a miner and what serves as the basis for our guesswork? The viewers can compare their intuitive reactions with the results from an online experiment that collected responses from Norway, Russia, and the Unites States, all of which have substantial mining communities. Three factors are outlined as potentially relevant for identifying miners: mining workwear, gender, and facial expression. Although the

---

[1] "Совершенно черные, пропитанные углем, не мытые по целым неделям лица, лохмотья всевозможных цветов и видов <…> все это перемешалось в пестрой, суетливой, галдящей массе" (Kuprin 1971: 416). All translations in this article are mine, unless indicated otherwise.

presence of mining outfit and male gender still bear a traditionally strong association with the mining profession, the results reveal certain nuances across the three countries under scrutiny.

The article is structured as follows. I first offer a short overview of recent artistic projects involving portraits of miners (section 2). The current mini-gallery is presented in section 3, preceded by some theoretical remarks that inspired the idea for this project (3.1) followed by a short discussion of the portraits and their prototypes (3.2). The results of the online experiment targeting respondents in Norway, Russia, and the United States are offered in section 3.3. The findings and the overall discussion are summarized in section 4.

2.   *Projects involving portraits of miners*

Today coal miners' art is a substantial niche that is fairly well documented and catalogued by mining museums and art galleries, such as the National Coal Mining Museum for England[2] and The Mining Art Gallery at Auckland Castle[3]. In the recent years, miners have become a popular motive among photographers, who take photoshoots of miners across the world and move away from gloomy pictures similar to the one proposed by Kuprin. The faces of the miners captured by the Australian photographer from Brisbane Dean Whitling (2012)[4] and the Russian photographer from Novosibirsk Roman Shalenkin (2019)[5] are smiling, while the miners are still presented in their mining workwear. A similar approach was undertaken by Kristin Stoltz (2000) when she photographed miners in Svea. Although many of Stoltz' portraits were shot in the break room as the miners were coming from work, the dominant mood amongst them was that of joy and pride. Some of these shots are known to the public through the interior decoration in the Karlsberger pub in Longyearbyen where copies of the series are displayed.

Below I provide a short overview of three relatively recent conceptual projects involving portraits of miners: *1040m Underground* on miners in the Donbas region by Cai Guo-Qiang (2011), a photo gallery of Spanish miners by Pierre Gonnord (2014, 2015), and a series of pictures from Jharia coal mines by Ken Hermann (2017).

2.1 *"1040m Underground" by Cai Guo-Qiang (2011)*

Cai Guo-Qiang is a New York-based artist born in 1957 in Quanzhou City, China. He uses a variety of media such as drawing, installation, video and performance art but is best known for his experiments with gunpowder. Cai has received many prestigious art prizes such as the Golden Lion at the 48th Venice Biennale (1999), the Japan Cultural Design Prize (1995), and the 7th Hiroshima Art Prize (2007) (see Enrico 2011).

---

[2] https://artuk.org/visit/venues/national-coal-mining-museum-for-england-3478
[3] https://aucklandproject.org/venues/mining-art-gallery/
[4] http://nptchr.blogspot.com/2012/05/blog-post_4973.html
[5] https://35photo.pro/photo_3132613/

1040M Underground[6] stems from Cai Guo-Qian's experience of the coal and salt mines in the industrial Donbas region. Cai descended 1040 meters below ground level and followed the miners into a more than 1000 meters long tunnel, mirroring the same route the miners take every day. This visit inspired the artist to conceive a gunpowder drawing installation entitled *Monuments on Shoulders*. The installation is based on 27 larger-than-life portraits of miners from *Artemsol* in Soledar and *Oktyabrskiy Rudnik* ('October mine') made by nine local painters. All 27 portraits were ignited using different grades and grains of gunpowder to achieve different visual effects, and then mounted on frames resembling the ones that used to hold the portraits of Soviet leaders at parades. A mound of coal was spread across the gallery to the left and a slope of salt to the right. The drawings were lit with mining lamps hanging from the ceiling to reinforce the effect (see Pictures 1 and 2 below taken from Filippetti 2011).

Picture 1. The portraits of Donbass miners are ignited.

Picture 2. The exhibition at the main gallery of *Izolyatsia*.

The production process was open to the public, and the audience was able to witness the artists at work and experience the ignition of the gunpowder drawings. The installation was presented to the public on August 27 – November 13, 2011, at the *Izolyatsia Art Center*, a multidisciplinary art foundation located on the territory of a former insulation materials plant in Donetsk, Ukraine (see Izolyatsia 2011 for more detail).

The miners' faces with hollow and yet radiant eyes – the effect provided by gunpowder – create a very powerful image. The overall message of the installation was summarized in the press release as follows:

> "Salt, coal and gunpowder are all extracts from nature, yet also simultaneously accomplishments of our civilization. Through the transfiguration of energy, each gunpowder drawing in *Monuments on Shoulders* was born. It represented the radiance of life, as well as the underlying risk and anxiety in a miner's occupation" (Izolyatsia 2011).

---

[6] https://caiguoqiang.com/projects/projects-2011/1040m-underground/

2.2 Spanish miners by Pierre Gonnord (2014, 2015)

The French-born artist Pierre Gonnord (b. 1963), now based in Spain, enjoys success in both Europe and the United States. For many years he has been tracking down the dark sides of globalization, capturing on camera coal miners, punks, immigrants and gypsies. According to him, he searched for subjects "from the ghettos, the outskirts of the city that flee from a globalized world from which they feel rejected" (Hasted 2015a). After spending time with such communities, Gonnord shoots portraits against dark backgrounds in the manner of an Old Masters' painting. As put by the art advisor Sarah Hasted:

"Much as Francisco Goya immortalized the vagrants and vagabonds of a country ravaged by war, as Caravaggio elevated street life to the height of history painting, as Vélazquez and Rembrandt mined the psychological depths of their subjects, so too does Gonnord explore the darkness" (Hasted 2015b).

Since 2009, Gonnord has photographed miners in the northern Spanish mines of Carbonar, Monsacro, Pozo Santiago, Maria Luisa, Candin, Nicolasa, Tineo, Cerredo and Villablino (Rich 2015). The miners work as deep as 2,300 feet underground in seven-hour shifts. Gonnord photographs them after they re-emerge onto the surface. The results of the shooting sessions were presented at the exhibitions *Coal* (2014) at the Museum of Mining and Metallurgy in León, Spain, and *The Dream Goes Over Time* (2015) at the Hasted Kraeutler Gallery in New York.

The men look as if they have been standing close to a bomb detonation (see Pictures 3-7 below). The *New York Times Magazine* published the following vivid description of the images:

"Their faces are caked in toxic dust and dried sweat, the whiteness of their eyes accentuated by coal eyeliner. Their expressions combine pride, melancholy and bewilderment. In their poses and demeanors, taken together with Gonnord's palette — dominated by olives, blacks and grays — the photographs recall Diego de Silva y Velázquez's dreamy, disconcertingly lifelike oil portraits" (Rich 2015).

Pictures 3-7. Selected portraits of Spanish miners by Pierre Gonnord, taken from Rich (2015) and Spencer (2015).

Gonnord's photographs are compared to Lewis Hine's portraits of child laborers (particularly children employed in the Pennsylvania coal mines), Dorothea Lange's Dust Bowl portraits, and Ruben E. Reyes's portraits of foreign laborers in Dubai. As emphasized by Rich (2015), there is, however, an important difference: the Spanish miners do not

resent their dirty work. In this sense, they can be compared to Andres Serrano's series *Nomads* (1990)[7], the studio-style photographs of homeless individuals who confronted the camera in a proud, almost defiant manner. Gonnord's Spanish miners are fighting to remain in the mines and endure the backbreaking labor, as well as the dangerous dust, since they do not see a better way of supporting their families. When the government issued heavy reductions to the mining subsidies in 2012, miners held strikes and sit-ins and blockaded roads, highways and railroad lines. Thousands of them marched to Madrid, walking up to 250 miles. How can we destroy a poisonous industry without destroying its workers? Gonnord's photographs examine Europe's declining coal sector without easy moralizing: to him, these men are both victims and heroes, selfish and selfless.

2.3   *Jharia coal mines by Ken Hermann (2017)*

Based in Copenhagen, Denmark, Ken Hermann has traveled all over the world, visiting secluded regions of India and Ethiopia and modern metropolises like New York. Exploring people and culture, Hermann has contributed to the *National Geographic* magazine and is the winner of multiple international photography awards. His portraits of miners taken in Jharia have been made open to the public at the exhibition *Coal Mines* (2017) at La Quatrieme Image in Paris.[8]

Jharia is located in the north-eastern corner of India and is one of Asia's largest coal mines. The local coal mines consist of 23 active underground mines and nine open pits that spread over 450 square kilometers. Over 60 square kilometers of mines are now on fire, both above and below ground.[9] The fields have suffered a coal bed fire since 1916, resulting in water and air pollution in local communities including the city of Jharia (Stracher and Taylor 2004, Stracher 2007). The resulting pollution has led to a government decision of relocating the local population; however, little progress has been made so far.
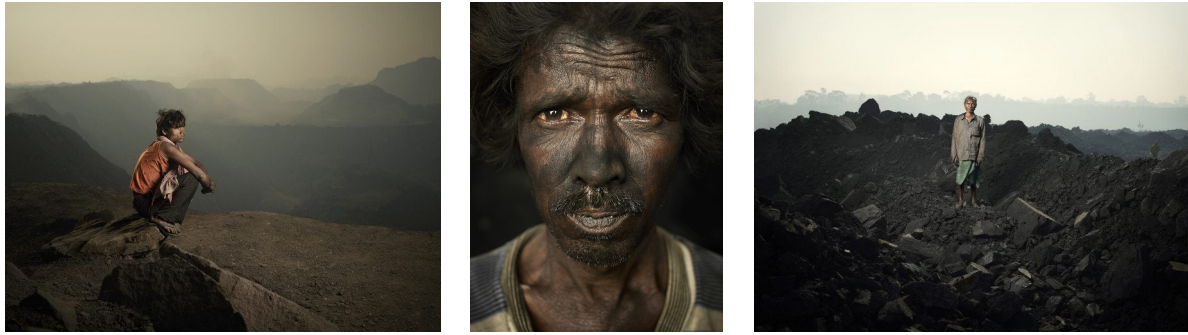
In his series of portraits from the area, Hermann was aiming for the look that would reflect "an almost surreal universe" (Gampat 2015), which can be illustrated by Pictures 8-10 below. He photographed miners against the haunting landscape where they worked. Here is how the photographer himself describes his impression of the place:

> "The surroundings were hot and dirty and there is a lot of illegal mining in the area which is big business so the people who run this place don't like to create attention to it. The thing I remember the most was my meeting with the miners because even though they were really hard-working and dirty they were some of the proudest people I have ever photographed" (Gampat 2015).

---

[7] https://andresserrano.org/series/nomads
[8] https://kenhermann.dk/about/
[9] https://kenhermann.dk/portfolio/coal-mines/

Pictures 8-10. Selected photographs of Jharia coal mines by Ken Hermann, taken from Gampat (2015).

The above-mentioned artistic projects react to political and economic changes in the mining industry. While reflecting the individual features of each miner, these portraits place the major focus on the miners' representation of their communities, taking into account the geographical and ethnographic peculiarities of each region.

3.   *Spot the Miner (2020)*

The present project shifts the focus from the geographical and political aspects of mining to its psychological and social aspects. This section outlines the point of departure for the project, and presents a mini-gallery of four portraits accompanied by a discussion of an online experiment.

3.1 *The project's theoretical grounds*

According to perception psychologists, humans are prone to both direct perception (Gibson 1966), which simply collects information from the environment, and constructivist perception (Gregory 1970), where visual information is combined with the previously stored information about the world, built up as a result of experience.

Gibson's theory, also known as a 'bottom-up' theory, states that perception begins with the stimulus itself and should be explained solely in terms of the environment. The emphasis on direct perception explains the fast perception of the environment but fails to account for occasional inaccurate perceptions, e.g. illusions.

'Top-down' processing happens when we form our perceptions beginning with the big picture. Based on Gregory's theory, nearly 90% of what we see is lost by the time it reaches our brains. Because of this, the brain has to make its best guess based on our past experiences, prior knowledge, expectations, and beliefs. In other words, when analyzing what we see, we make calculated assumptions. In the art theoretical discourse, similar claims have been formulated by Ernst Gombrich (1960: 81):

> "The familiar will always remain the likely starting point for the rendering of the unfamiliar; an existing representation will always exert its spell over the artist even while he strives to record the truth".

What does this theory mean for the current project? In terms of the 'bottom-up' theory, people presented in mining workwear will be more likely perceived as miners than people

in everyday clothes. Are clothes and coal stains the most decisive factor for our guesswork? If we assume that our past experiences and prior knowledge play a crucial role as suggested by the 'top-down' theory, we expect viewers to rely on additional factors while determining who in the gallery is a miner. Two other factors that can potentially be relevant cues are gender and facial expression.

To people unfamiliar with mining, the presence of women in mines will most likely seem unnatural. This view has its grounds and goes back to the Underground Work (Women) Convention, 1935 (No. 45), which prohibited women from working in underground mining (see Meireles and Edmonds 2021: 18). At first, this was seen as a way to protect women from the hardships of mining and support the male breadwinner model (Romano and Papastefanaki 2020). With time, the presence of women in mines was not only perceived as unnatural but also became feared, which resulted in myths of women's presence being the cause of accidents (Castilhos and Castro 2006; Perks and Schulz 2020). The attitude to hiring women partially changed during the Second World War, when governments, companies and unions in Australia, Canada, the United States and many other countries were forced to recruit women to fill critical mining positions. However, the postwar period brought a rapid resumption of restrictions. The turning point occurred in the 1970s, when women miners in the United States won a lawsuit that required Appalachian coal companies to hire women (Mercier 2011). Given this background information, we can expect viewers to be less likely to select female portraits as representing miners. It should be emphasized, however, that although the mining sector remains male-dominated, women work in an increasingly wide range of roles. The fourth meeting of the Standards Review Mechanism Tripartite Working Group (held in Geneva from 17 to 21 September 2018) recommended that Convention No. 45 should be classified as outdated (Meireles and Edmonds 2021: 1).

The second additional factor that was mentioned is facial expression. Mining is associated with very hard manual labor, which is often reflected in a rigid and deeply exhausted look. An inherent prejudice about the nature of mining work would be to link miners' faces with signs of fatigue. Thus, viewers may also treat dismal facial expressions as a cue when identifying miners. As we will see in section 3.3, not only weariness but also a deeply concentrated look can potentially be attributed to miners.

3.2 The discussion of the mini-gallery "Spot the Miner"

The current project comprises four charcoal portraits (size A3) that present men and women in everyday clothes or mining workwear (see Pictures 11-14 below). The portraits were made by the author of this article for the workshop *Mining in Context: Svalbard and Elsewhere* (Longyearbyen, February 7-8, 2020) dedicated to the 100th anniversary of the Svalbard treaty. Table 1 below provides a short summary of the portraits' details.

#	Is this person a miner?	Mining workwear	Gender
Portrait 1	no	yes	M
Portrait 2	yes	no	M
Portrait 3	no	yes	F
Portrait 4	yes	yes	F

Table 1. Summary information on the four portraits in the mini-gallery *Spot the Miner*.

| Portrait 1 | Portrait 2 | Portrait 3 | Portrait 4 |
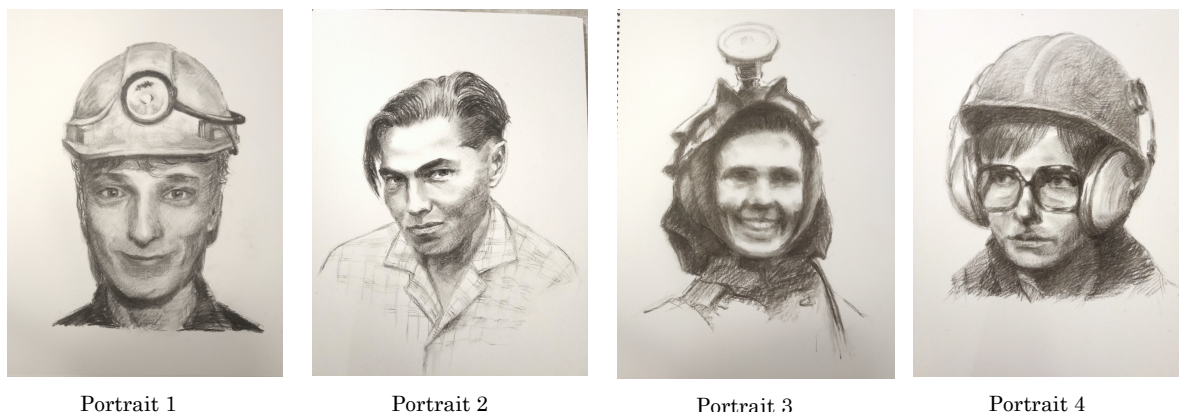
Pictures 11-14. The four portraits in the mini-gallery *Spot the Miner*.

The mini-gallery presents a male miner in everyday clothes (Portrait 2) and a female miner in mining workwear (Portrait 4). The two other portraits are those of a man (Portrait 1) and a woman (Portrait 3) in mining workwear who do not work in the mining industry.

Portrait 1 depicts an academic wearing a miner's helmet. Portrait 2 introduces Nikolai Shubnikov, who in 1951–1952 worked as a conductor of mine carts and a mining foreman at the mine *Pionerka*, Kemerovo region, and in 1956–1969 at the mine *Chertinskaya-Yuzhnaya*, Belovo, Kemerovo region. *Pionerka*, whose history goes back to 1930, was one of the first mines developed in Kuzbass (Kuznetsk Basin), one of the largest coal mining areas in Russia located in south-western Siberia. The mine was shut down in 1996.[10] Established in 1956, *Chertinskaya-Yuzhnaya* was in use until 2016.[11] Portrait 3 shows a school teacher on a mine tour, the wife of the person in Portrait 2[12]. In the portrait, she is wearing a miner's helmet called "rakushka" ('shell'), aka "Stakhanovka", named after the Donetsk miner Alexei Stakhanov, who in August 1935 set a record of coal production per shift – 102 tons, which amounted to 14 norms.[13] The last portrait, Portrait 4, sketches one of the interviewees in the NRK (Norsk rikskringkasting, i.e. 'the Norwegian Broadcasting Corporation') documentary "Kvinner på Svalbard" ('Women on Svalbard') (1978)[14], which regrettably is no longer available online.

The portraits were presented to the audience at the workshop *Mining in Context* in Longyearbyen with approx. 10 participants. All these people have done research on or about Svalbard, and some specialists had a close connection with the Svalbard community. The portraits were shown as slides in the same order as presented in this article. Some of the viewers recognized people shown in Portraits 1 and 4 and thus were aware of these models' occupation. The audience was not sure whether the person in Portrait 3 was a

[10] http://miningwiki.ru/wiki/Шахта_«Пионерка»

[11] http://miningwiki.ru/wiki/Шахта_«Чертинская-Южная»

[12] The photographs that served as prototypes for Portraits 2 and 3 were provided courtesy of the couple's son Evgeny Shubnikov.

[13] https://mig26.ru/news/558-territoriyakulturyrosatoma-istoriyaodnogoeksponata-zatomuzey.html

[14] https://tv.nrk.no/serie/kvinner-paa-svalbard

miner but suggested that the person in Portrait 2 was. The reasoning in the latter case relied on the profound, experienced look of the person in Portrait 2.

To summarize, we can say that at least for the academic community well familiar with Svalbard, such factor as gender is not decisive. The mining workwear present in the picture appears to be more relevant — possibly, as a result of a long-established tradition to portray miners in their workwear. Hence the person in Portrait 3 can potentially be identified as a miner. Lastly, additional factors, such as facial expression, have indeed revealed to be relevant, and were mentioned by the audience in the discussion of Portrait 2.

3.3 *Results of an online experimental study*

To compare the results obtained in the pilot survey at the workshop *Mining in Context* discussed in section 3.2, I have conducted an online experiment by way of a questionnaire. The outline of the questionnaire is available in the Appendix. The aim was to collect responses from different countries that have sizeable mining communities: first and foremost, Norway, Russia, and the United States. Thus, the experiment was posted in three different languages — Norwegian, Russian, and English. For readers' convenience, all the comments from the non-English questionnaires cited in the article have been rendered into English.

The experiment contained two sections. The main bulk of the questions was related to the four portraits, where, looking at each portrait, respondents were asked whether, in their opinion, the person on the portrait was a miner. After choosing an answer, respondents could leave a small comment, e.g. indicate what influenced them when answering and how confident they were in their choice. The questions about the portraits were preceded by some general questions about respondents' background, e.g. their gender, age and education, as well as their exposure to mining, i.e. if they have ever lived in a mining region, have been to a mine or know people who are working or have worked in a mine. In addition, respondents were asked to indicate their country of residence to enable sorting the responses by country and not by language. The surveys were made available through social media in May 2022 and distributed further through crowdsourcing. Several multilingual respondents chose to fill in the questionnaires not in their native language.

The general outline of the results is presented in Table 2 below. The three questionnaires received 136 responses, with Norway represented by 26 responses, Russia by 43 responses, and the United States by 56 responses. Additionally, the English questionnaire collected 11 responses from countries other than the United States. These included: Bulgaria (1 respondent), Canada (2 respondents), France (1), Germany (1), Italy (1), Mexico (1), Poland (2), Sweden (1). One respondent chose not to indicate his/her country of residence. As all of these countries are represented only by one or two responses, I have conflated them in one group, named "Other". This group might serve as an indicator of the respondents' intuition regardless of their country of residence.

Country	Portrait 1		Portrait 2		Portrait 3		Portrait 4		# of responses
	yes	no	yes	no	yes	no	yes	no	
Norway	16	10	15	11	10	16	12	14	26
Russia	35	8	18	25	22	21	14	29	43
US	51	5	28	28	38	18	46	10	56
Other	9	2	2	9	6	5	4	7	11
Total	111	25	63	73	77	59	76	60	136

Table 2. "Yes/no" responses by country in raw counts. Fisher's Exact Test with simulated p-value (based on 1e+07 replicates) for the positive responses across Norway, Russia and the US yields a p-value of 0.2303.

If we look at the overall distribution of the "yes/no" answers provided in the last row of Table 2, the only case that shows a clear-cut preference in the respondents' choice is Portrait 1, of a man in mining workwear who is perceived as a miner. Among the remaining portraits, Portraits 3 and 4 received higher positive responses as both illustrate people in mining workwear, although both individuals happen to be women. Portrait 2 is characterized by a slightly higher number of negative responses and it is the only portrait in the mini-gallery where the person is depicted in everyday clothes.

If we divide the responses by country, the picture will be more nuanced. Figure 1 below visualizes the numbers from Table 2 in percentages. Portrait 1 does not show much dispersion and is still perceived as a miner by the majority of the participants, ranging from 91% obtained from the United States to 61.5% from Norway. Portrait 2 is classified as a non-miner by the respondents from the groups "Other" (82%) and Russia (58.1%), while 57.7% of the Norwegian respondents perceive him as a miner and the responses from the United States show a 50/50 split. Russia and the respondents from the group "Other" are slightly more convinced that Portrait 3 represents a miner (with 51.2% and 54.5% respectively), while Norway and the United States show almost mirror images: 61.5% of the Norwegian responses indicate that the person in Portrait 3 is not a miner and 69.6% of the responses from the United States perceive her as a miner. Portrait 4 entails a remarkable split between the responses from the United Stated (82.1% selected "yes") and Russia (67.4% selected "no"), with Norway and the group "Other" revealing comparable results (46.2% and 36.4% of positive responses respectively). Fisher's Exact Test with simulated p-value (based on 1e+07 replicates) for the positive responses across Norway, Russia and the US yields a p-value of 0.2303. Since the p-value is smaller than 0.05 it can be concluded that the distribution of positive responses depends on the country.

Overall, we can say that the intuition of the Norwegian respondents is slightly more accurate for Portraits 2 and 3, whereas the respondents from the United States tend to match the correct answer to a large extent for Portrait 4. The responses from Russia and the group "Other" show very similar results apart from Portrait 2, where the Russian participants select a higher number of positive responses. For all respondents (except Norway) the presence of workwear is the most decisive factor. Gender does not seem to be relevant at all for the respondents from the United States.
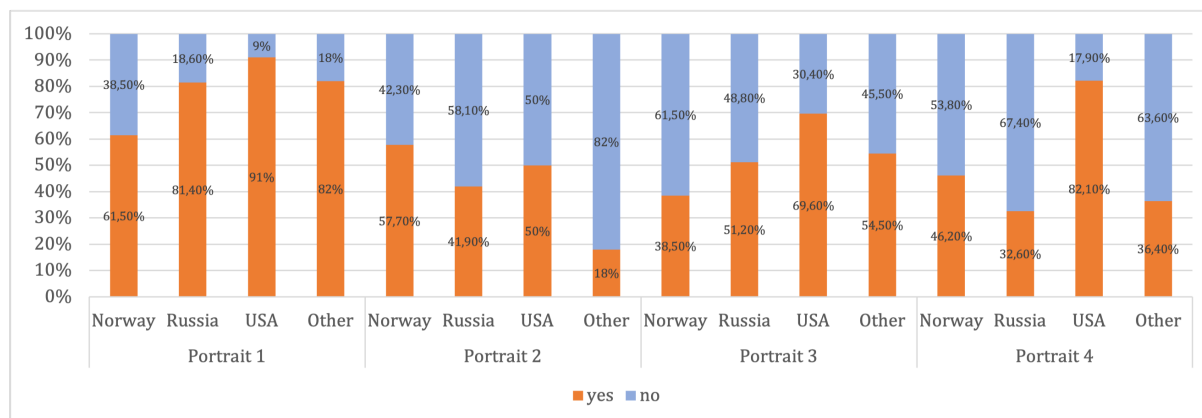
Figure 1. The distribution of the "yes/no" responses by country in percentages.

Whereas gender and education of the participants did not reveal any decisive differences, age seems to be relevant at least for some of the countries under scrutiny. Within Norwegian responses (see Table 3 and Figure 2 below) there seems to be a slight difference between the age groups below 45 and above 46 for Portrait 2: older groups are more prone to perceive the person in Portrait 2 as a miner. This observation, however, does not demonstrate a robust statistical effect, possibly due to the scarcity of the data: Fisher's Exact Test for the positive responses across age groups yields a p-value of 0.5366.

In general, the Norwegian respondents from the older age groups seem to provide more correct predictions. Some respondents from the age group above 46 left valuable comments indicating what triggered their choice. Those who selected less obvious answers usually emphasized the facial expression of the person in the picture, cf. the following comments: "no" for Portrait 1: "Looks carefree"; "yes" for Portrait 2: "Intense and concentrated", "Looks a little preoccupied / tired"; "no" for Portrait 3: "She has her eyes too far ahead"; "Looks too happy", "yes" for Portrait 4: "More tired". Some comments acknowledged that miners could be depicted in everyday clothes: "yes" for Portrait 2: "Russian/Ukrainian miner in his spare time?". Two participants selected the positive answer for Portrait 2 but indicated that they were not sure about their choice by writing "Maybe" in the comment box.

Age	Portrait 1		Portrait 2		Portrait 3		Portrait 4		# of responses
	yes	no	yes	no	yes	no	yes	no	
25-35	3	2	2	3	3	2	1	4	5
36-45	8	2	3	7	4	6	4	6	10
46-55	3	3	6	0	3	3	4	2	6
Over 55	2	3	4	1	0	5	3	2	5
Total	16	10	15	11	10	16	12	14	26

Table 3. The distribution of Norwegian "yes/no" responses over different age groups in raw counts. Fisher's Exact Test for the positive responses across age groups yields a p-value of 0.5366.
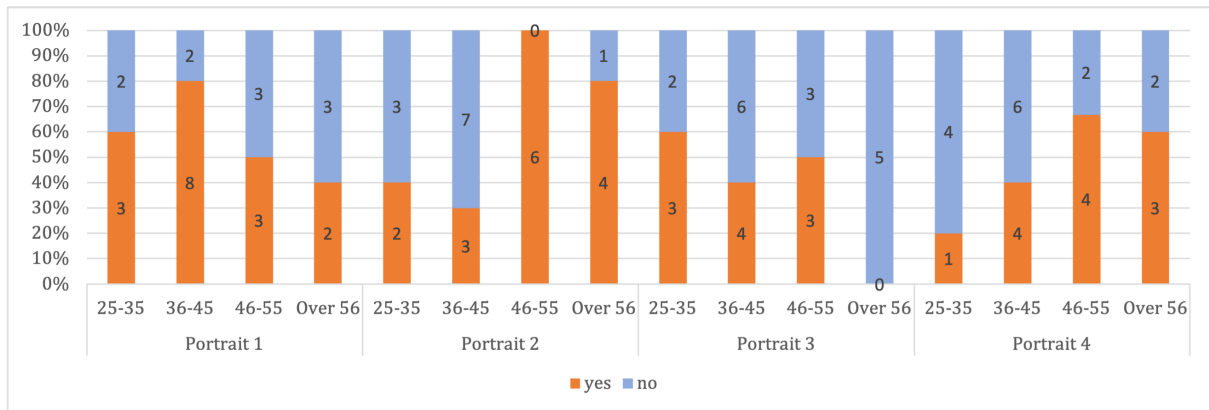
Figure 2. The distribution of Norwegian "yes/no" responses over different age groups.

The Russian questionnaire has a slightly different representation of age groups than the Norwegian one. Participants over 46 are underrepresented; however, the dataset contains many responses from participants in the age group 18-24, which is absent in the datasets from Norway and the Unites States. For the Russian respondents there seems to be a difference between the age groups below 35 and above 36 for Portraits 3 and 4 (see Table 4 and Figure 3 below). Based on Figure 3 we can make a speculation that the older age groups are less likely to perceive female models as miners. The numbers, however, are rather small and this difference does not reveal to be statistically significant: Fisher's Exact Test for the positive responses across age groups yields a p-value of 0.8069.

Respondents from the age group 18-24 are less prone to leave comments. However, participants in the age group 25-35 did supply some of their answers with detailed comments. These comments usually characterize the attire and various attributes of the person portrayed (glasses, haircut, clothing) but remarks on his/her facial expression are also possible. Even when the participant's choice deviates from the correct answer, the comments reveal that s/he was hesitant and considered various factors, cf.:

A) "yes" for Portrait 1: "Yes, with an asterisk. Strange: the helmet fits, but the look is too lively for the round-the-clock exhausting physical work. Perhaps he is a novice miner the morning before the descent. Or the morning after his own wedding"; "Miner's helmet. He looks like a student of some geological faculty — therefore, perhaps, a future miner";

B) "no" for Portrait 2: "Dubious hairstyle for work in the mine"; "There is no mining equipment. Based on the hairstyle, face and shirt he does not look like a miner either";

C) "yes" for Portrait 4: "The glasses are similar to polymer ones, she has a helmet (albeit without a flashlight) and protective headphones. Intuitively I'm not sure of the answer — something is wrong with the face itself".

One respondent was primed by an image from the videogame *Brigador* and thus selected "no" for Portrait 4. The image is available here: https://brigador.fandom.com/wiki/Efigénia_Tseng.

Age	Portrait 1		Portrait 2		Portrait 3		Portrait 4		# of responses
	yes	no	yes	no	yes	no	yes	no	
18-24	23	4	13	14	15	12	11	16	27
25-35	4	1	2	3	4	1	3	2	5
36-45	5	3	3	5	2	6	0	8	8
Over 45	3	0	0	3	1	2	0	3	3
Total	35	8	18	25	22	21	14	29	43

Table 4. The distribution of Russian yes/no responses over different age groups in raw counts. Fisher's Exact Test for the positive responses across age groups yields a p-value of 0.8069.
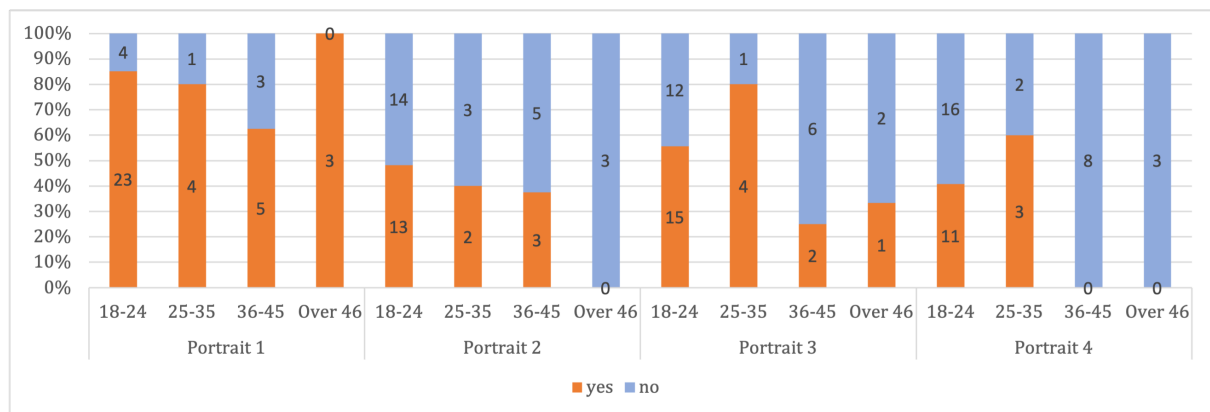

Figure 3. The distribution of Russian "yes/no" responses over different age groups.

Age appears to be even less relevant for the respondents from the United States (see Table 5 and Figure 4 below). In general, in this dataset all age groups select "yes" more often than "no". One notable exception is the age group over 56 which provides more negative responses for Portraits 2 and 3. However, the data is scarce, and this effect is not confirmed statistically: Fisher's Exact Test with simulated p-value (based on 1e+07 replicates) for the positive responses across age groups yields a p-value of 0.8776.

The comments made by the respondents above 56 who selected "no" for Portrait 3 include the following: "This one could be, because of the headlamp, but does not have a hard hat. I am leaning toward no"; "Kid's mining costume". This shows that the miner helmet "rakushka" ('shell'), also known as "Stakhanovka" and widely used in the Soviet Union in the middle of XX century, presents a challenge for participants as it is outdated, and many do not recognize it as mining workwear. The respondents from the United States selected "yes" for Portrait 2 in 50% of cases, their comments emphasizing that miners are normal people who do not spend their every waking hour in mining workwear: "Miners aren't always wearing hats or uniforms"; "Could be, outside work hours"; "Yes, I would assume that he is a miner on his own free time. At home"; "This person didn't put on their safety gear on yet". Some respondents noted that not all miners work underground: "Miners also work above ground, so just because he is not wearing mining gear, he still could be employed as a miner".

Age	Portrait 1		Portrait 2		Portrait 3		Portrait 4		# of responses
	yes	no	yes	no	yes	no	yes	no	
25-35	5	0	2	3	5	0	4	1	5
36-45	28	3	16	15	23	8	26	5	31
46-55	7	2	7	2	6	3	7	2	9
Over 56	11	0	3	8	4	7	9	2	11
Total	51	5	28	28	38	18	46	10	56

Table 5. The distribution of the US "yes/no" responses over different age groups in raw counts. Fisher's Exact Test with simulated p-value (based on 1e+07 replicates) for the positive responses across age groups yields a p-value of 0.8776.
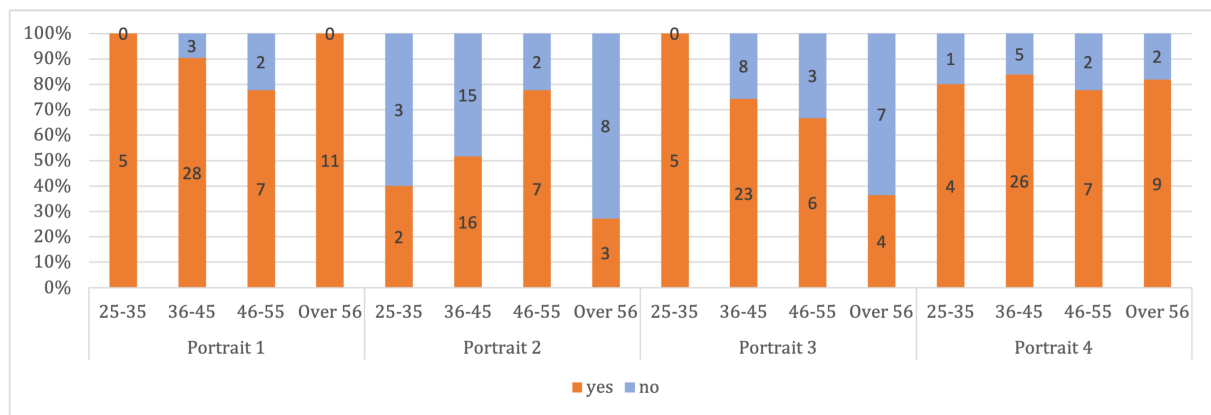

Figure 4. The distribution of the US "yes/no" responses over different age groups.

The last factor that needs to be considered is contact with miners and/or mining regions. Table 6 and Figure 5 below present an overview of responses from the participants who have replied positively to at least one of the following questions: "5. Have you ever lived in a mining region?" and "6. Have you ever been to a mine or do you know people who are working or have worked in a mine?". Our dataset contains 69 such responses, more than a half of which belong to the participants from the United States.

Country	Portrait 1		Portrait 2		Portrait 3		Portrait 4		# of responses
	yes	no	yes	no	yes	no	yes	no	
Norway	5	4	4	5	4	5	4	5	9
Russia	11	4	5	10	9	6	7	8	15
US	37	3	22	18	31	9	33	7	40
Other	4	1	1	4	4	1	1	4	5
Total	57	12	32	37	48	21	45	24	69

Table 6. The distribution of the "yes/no" responses of the participants who had some connection to mining. Fisher's Exact Test for the positive responses across Norway, Russia and the US yields a p-value of 0.8069.

Figure 5 below is almost identical to Figure 1 with the overall distribution of the responses by country. The only difference is that the Russian respondents who have some exposure to mines and miners show a slightly higher preference for the positive answer in the case of female Portrait 4. This might explain why the differences among the countries are not confirmed statistically for this dataset, or the numbers can be too small to reveal

the differences. Otherwise, the respondents from this group follow the general tendencies outlined above.
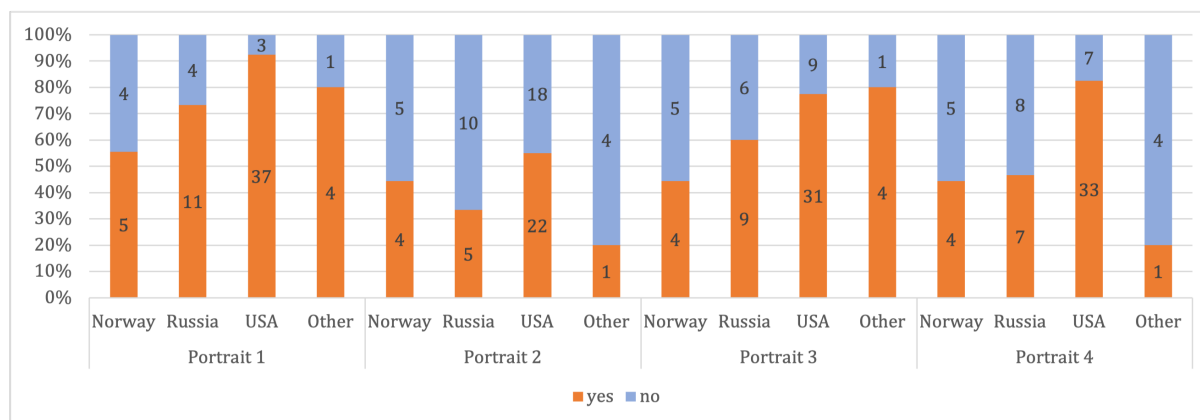

Figure 5. The distribution of the "yes/no" responses of the participants who had some connection to mining.

As mentioned earlier, some respondents have outlined additional factors that the questionnaire did not focus on but which might nevertheless affect the results. Such factors include the old workwear in Portrait 3, the presence of glasses in Portrait 4, and the facial expression.

Ten respondents from the United States emphasized that they had difficulties with analyzing the clothing in Portrait 3: "Low confidence, because no helmet. But she looks Russian, who knows what the safety standards over there are/were like?"; "Not sure what this person is wearing"; "Looks like a costume, not real gear"; "Looks like a comic"; "Could be a hat and headlamp. Not sure"; "Could be. Not wearing what I normally see as miners' equipment, but this could be unfamiliar equipment"; "Based on what that person is wearing, doesn't look like mining attire"; "I don't know what kind of headgear that is, but there's a light on top". Similar comments appeared three times in the Norwegian and Russian responses. Norwegian: "Unsure, but I do not associate such clothing with mines"; "The protective equipment is somewhat indistinct, based on it I cannot decide whether this is suitable equipment for the work (now or in the past). The face shows some more feminine features and it seems that the hair is set up. Women were traditionally not miners in Norway, but it could happen"; Russian: "I have never seen such a rubber helmet. Is it a diver? Or a speleologist examining a gas pocket?". Difficulties with identifying the mining attire in the case of Portrait 4 did not always lead to negative answers. Some comments, on the contrary, revealed a rather high degree of confidence, cf. two comments from the US questionnaire: "This individual knows how to dress for mining and looks like a hard worker, the clothing influenced my decision"; "She has her safety gear on".

Glasses as a distracting factor were mostly mentioned by the Norwegian respondents (4 comments): "You do not wear reading glasses in a mine"; "Something is wrong with the glasses. This does not work in a mine"; "To me, he looks like a journalist"; "Based on the use of glasses, I do not think it is normal to use a skilled worker as a miner. I think this is a man since there is something more masculine in the jawbone, but I am not sure". One similar comment appeared in the responses from the United States: "Glasses seem out of

place". Additionally, as follows from the comments above, the participants were not always certain about the gender of the person in Portrait 4.

Finally, as intuitively anticipated and partly shown in the pilot survey in Longyearbyen, the facial expression and the posture of the person depicted also affect the overall impression. This additional factor has been decisive for some respondents when analyzing Portrait 2. A contemplative and concentrated look was associated with miners: "My first reaction is yes, but it's based on stereotypes (greasy, unkempt hair and work shirt suggest working class). But he could have a completely different profession entirely!"; "He haunches his head from walking in cramped spaces"; "He has a depth in his eyes, it seems like he carries a large weight on his shoulders"; "He looks like miners I've seen in photos"; "The scruffy face influenced my decision"; "Intense and concentrated", "Looks a little preoccupied / tired"; "Thoughtful, contemplative". To a lesser extent the facial expression has been important for some participants in the case of Portrait 3, where a happy look was associated with non-miners: "This looks like another non-miner wearing mining garb for a picture. Too happy"; "Happy, attentive".

4.   Conclusion

Coal mining is an industry that involves hard physical labor and harsh mental conditions. In the recent decades it has become a highly debated topic as the coal sector is currently in decline. This decline has been hastened, among other things, by competition from the renewable energy industry and new air quality regulations passed by the European Union. Modern artistic projects involving portraits of miners evolve as artists respond to political and economic changes in the mining industry. They usually place a major focus on miner communities, rather than individual miners, considering the geographical and ethnographic peculiarities of each community.

The present project shifts the focus towards psychological and social aspects of the mining industry by looking at our broad idea of a miner. What kind of reaction will the audience have if miners are blended with other people by being presented without their workwear? What kind of stereotypes do we have regarding the gender of workers in the mining sector? The discussion of the portraits from the mini-gallery *Spot the Miner* among specialists on Svalbard revealed that both genders are perceived as equally suitable for miners' jobs.

The same questions have been made available to a wider audience through an online questionnaire, presented in Norwegian, Russian, and English in order to compare the responses from Norway, Russia and the United States, all of which have significant mining communities. The respondents were shown four portraits and asked whether those portrayed were miners. The results from 136 responses indicate that, overall, mining workwear and male gender still hold a strong association with miners. Portrait 1 depicting a male non-miner in a mining helmet has received affirmative responses from most participants. Yes, within the three countries, we find slightly different tendencies. Norwegians seem to be more reserved in selecting "yes", whereas Americans are more generous with choosing the positive answer. The Norwegian responses were more accurate for Portrait 3 that shows a female non-miner, as well as Portrait 2 that depicts a male

miner without the mining workwear. These accurate intuitions partly stem from careful considerations of the facial expressions in these portraits by older age groups (above 46). For the American respondents gender seems to be a less decisive factor than attire. Also, the US respondents more openly expressed the difficulties that they encountered while identifying the old mining workwear in Portrait 3. The respondents from the age group above 56 provided more negative responses for Portraits 2 and 3, partially as a consequence of not being able to identify the necessary attire. Both the Norwegian and the American participants in their comments emphasized that miners are normal people that do not always wear professional uniforms. The Russian responses in general are comparable with the mixed group "Other" that includes sporadic participants from various countries (Bulgaria, Canada, France, Germany, Italy, Mexico, Poland, and Sweden). However, the Russian respondents have given more positive answers for Portrait 2 than the representatives from the group "Other". A relatively high number of positive responses for the two female portraits (3 and 4) in the Russian questionnaire could be secured by the younger generation (participants below 35), but the numbers in the older groups are too small to confirm this statistically.

The survey has not revealed participants' contact with miners and/or mining regions to have a strong effect on the outcome. 69 participants have indicated some exposure to mines, miners or mining regions but the distribution of the "yes/no" answers across countries in this subset is similar to the overall distribution. The only difference is that the Russian respondents who have some exposure to mines and miners show a slightly higher preference for the positive answer in the case of Portrait 4 featuring a female miner. This nuance might make the Russian respondents more similar to the participants from Norway and the United States as the dataset of people with some exposure to mining did not reveal any statistical differences between the countries. To establish this association further, the questions concerning the relevance of participants' mining background might need to be more specific, including details on the type of exposure and the type of mines that the person is familiar with (e.g. open or underground). The fact that not all portraits showed modern attire was partially distracting. Some respondents have outlined additional factors that might affect the results, such as the type of workwear that is depicted, the presence of glasses, and the facial expression. On the one hand, old workwear, glasses, and a happy look might inhibit the perception of the subject of the portrait as a miner. On the other hand, a profound and contemplative look raises the probability of identifying the person as a miner.

Our ways of identifying miners reveal our degree of familiarity with the mining sector and miners' everyday routine. The more the person knows, the more s/he relies on the prior experience when identifying miners. It appears that mining workwear comes in as a decisive factor in the absence of other information. Finally, if it is possible to tell whether a person is a miner by looking at his/her facial expression, one can say that this line of work leaves an irreversible trace on people's lives. Can faces of workers from present-day mines be happier and less "identifiable" than the ones from 1800s and 1900s?

In *An Essay Concerning Human Understanding* John Locke emphasized that not only the soul but also the body makes the man:

"Should the soul of a prince, carrying with it the consciousness of the prince's past life, enter and inform the body of a cobbler, as soon as deserted by his own soul, every one sees he would be the same PERSON with the prince, accountable only for the prince's actions: but who would say it was the same MAN? The body too goes to the making the man, and would, I guess, to everybody determine the man in this case, wherein the soul, with all its princely thoughts about it, would not make another man: but he would be the same cobbler to every one besides himself" (Locke 1690).

Thus the answer to the question "Do clothes really make someone a miner?" lies not only in the outsider's perception of miners but also in their own perception of themselves. In art projects miners are still more often than not presented as a type, marked by emblematic mining attributes.

5.   References

Castilhos, Zuleica Carmen, and Nuria Fernández Castro. (2006). "Mulheres na Mineração: Restitutio Quae Sera Tamem". In Gênero e Trabalho Infantil Na Pequena Mineração: Brasil, Peru, Argentina, Bolívia, 41–64. Rio de Janeiro: CETEM/CNPQ.

Enrico (2011). Cai Guo-Qiang: 1040M Underground. Solo Exhibition at Izolyatsia Art Center in Donetsk, Ukraine. VernissageTV, August 29, 2011. Available at: https://vernissage.tv/2011/08/29/cai-guo-qiang-1040m-underground-solo-exhibition-at-izolyatsia-art-center-in-donetsk-ukraine/.

Filippetti, Jenny. (2011). Cai Guo Qiang: 1040M underground at Izolyatsia. Designboom, August 30, 2011. Available at: https://www.designboom.com/art/cai-guo-qiang-1040m-underground-at-izolyatsia/.

Gampat, Chris. (2015). Ken Hermann's Telling Portraits of Coal Miners. The Phoblographer, November 5, 2015. Available at: https://www.thephoblographer.com/2015/11/01/ken-hermanns-telling-portraits-of-coal-miners/.

Gibson, J. J. (1966). The Senses Considered as Perceptual Systems. Boston: Houghton Mifflin.

Gombrich, E. H. (1960). Art and Illusion: A Study in the Psychology of Pictorial Representation. Bollingen Series 35, Vol. 5. Princeton: Princeton University Press.

Gregory, R. (1970). The Intelligent Eye. London: Weidenfeld and Nicolson.

Hasted, Sarah. (2015a). Underbelly of globalization. Press-release printed on March 31, 2015 in International New York times. Available at: https://www.sarahhasted.com/files/pg_internationalnewyorktimes_2015.pdf.

Hasted, Sarah. (2015b). The Dream Goes Over the Time. Pierre Gonnord: artist biography. Available at: https://www.sarahhasted.com/artists/pierre-gonnord/the-dream-goes-over-time.

Izolyatsia (2011). Cai Guo-Qiang: 1040m Underground. Press-release from 1 May 2011—27 August 2011. Available at: https://izolyatsia.org/en/project/cai-guo-qiang.

Kuprin A.I. (1971). V nedrax zemli [In the Bowels of the Earth]. Collected works in 9 volumes. Volume 2. Moscow: Xud. literatura. pp. 416–427.

Locke, John (1690). Of Identity and Diversity In: An Essay Concerning Human Understanding, Book II (Of Ideas), Chapter 27. EBook #10615 produced by Steve Harris and David Widger, available at: https://www.gutenberg.org/files/10615/10615-h/10615-h.htm#link2HCH0030.

Meireles, Camila, and Casper N. Edmonds. (2021). Women in mining: Towards gender equality. International Labour Organization, Switzerland: Sectoral Policies Department. Availale at: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_821061.pdf

Mercier, Laurie. (2011). "Bordering on Equality: Women Miners in North America". In Gendering the Field: Towards Sustainable Livelihoods for Mining Communities, edited by Kuntala Lahiri-Dutt, 33. Canberra: ANU E Press. https://doi.org/10.22459/GF.03.2011.03

Perks, Rachel, and Katrin Schulz. (2020). "Gender in Oil, Gas and Mining: An Overview of the Global State-of-Play". The Extractive Industries and Society 7 (2): 380–88. https://doi.org/10.1016/j.exis.2020.04.010

Rich, Nathaniel. (2015). The last coal miners of Spain. The New Your Times Magazine. April 10, 2015. Available at: https://www.nytimes.com/2015/04/12/magazine/the-last-coal-miners-of-spain.html?_r=1#.

Romano, Rossana Barragán, and Leda Papastefanaki. (2020). "Women and Gender in the Mines: Challenging Masculinity Through History – An Introduction". International Review of Social History 65 (2): 191–230. https://doi.org/10.1017/S0020859019000774

Spencer, Liese. (2015). Going under: portraits of the last coal miners: Photographer Pierre Gonnord on how he captured the last gasps of a dying industry. The Guardian. October 21, 2015. Available at: https://www.theguardian.com/artanddesign/2015/oct/21/pierre-gonnord-photography-spanish-miners-portraits.

Stoltz, K. (2000). Svea-rampen. Svalbard 1996-1999. Longyearbyen. Available at: https://www.nb.no/nbsok/nb/99c03e2704bd90ce575e2d5e8e42c36d?lang=no#0.

Stracher, Glenn B., and T.P. Taylor (2004). Coal fires burning out of control around the world: Thermodynamic recipe for environmental catastrophe. In Stracher, G.B. (ed.), Coal Fires Burning around the World: A Global Catastrophe: International Journal of Coal Geology 59 (1–2): 7–17. https://doi.org/10.1016/j.coal.2003.03.002

Stracher, Glenn B. (2007). Coal fires burning around the world: Opportunity for innovative and interdisciplinary research. GSA Today 17 (11): 36-37. https://doi.org/10.1130/GSAT01711GW.1

6. *Appendix: questionnaire "Spot the Miner!"*

The questionnaire is available at: https://nettskjema.no/a/271988.

Dear friends,
Thank you for agreeing to take part in this little experiment!

After some general questions about you, you will be offered several portraits. By looking at each portrait, you need to say whether, in your opinion, the person depicted in the portrait is a miner.

After choosing your answer, you can leave a small comment. In the comment box, you can indicate what influenced your answer and how confident you are in your choice.

All responses are strictly anonymous. The experiment will take no more than five minutes.

Thank you in advance for your participation!

*Mandatory fields are marked with an asterisk **

Some questions about you:

1. Gender:*

- Male
- Female
- I prefer not to answer

2. Age:*

- 18-24
- 25-35
- 36-45
- 46-55
- 56-65
- 66-75
- Over 75

3. Education:*

- High school
- BA
- MA
- PhD
- Other

If you have selected "Other" in the question on education, you can leave a comment here:

4. Your country of residence*

5. Have you ever lived in a mining region?*

- Yes

- No

Comment:

[ ]

6. Have you ever been to a mine or do you know people who are working or have worked in a mine?*

- Yes
- No

Comment:

[ ]

Questions about the portraits:

Portrait 1. Is this a miner?*

- Yes
- No

Comment:

[ ]

Portrait 2. Is this a miner?*

- Yes
- No

Comment:

[ ]

Portrait 3. Is this a miner?*

- Yes
- No

Comment:

[ ]

Portrait 4. Is this a miner?*

- Yes
- No

Comment:

Svetlana Sokolova
UiT The Arctic University of Norway
svetlana.sokolova@uit.no