Article

Representations of environmental protest on the ground and in the cloud: The NOTAP protests in activist practice and social visual media

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Abstract

This article advances knowledge on activist technosocial practice by studying the realities and representations of on-the-ground environmental resistance and their intersections with visual representations of protest on Twitter. It does so by focusing on the case of resistance to the Trans Adriatic Pipeline, commonly known as TAP, in southern Italy, and on mixed methods for data collection, including ethnographic observations, semi-structured interviews and an AI-assisted visual ethnography of a large collection of computationally collected and categorised images posted on Twitter. By comparing online and offline representations of protest, the study demonstrated that only a partial overlapping existed between them, thus adding a nuance to the digital criminological literature premised on the existence of blurred boundaries between online and offline experiences of injustice. Themes overlapped in their representations of protest, with images of on-the-ground visual resistance being used on Twitter to extend and amplify the contestation of everyday spaces and to support offline and online initiatives to stop the pipeline. Differences in the recurring themes were instead reconnected to the inherent secrecy of some of the protest's strategies and to the typical ways in which Twitter tends to be used by social movements.

Introduction

Over the past decades, digital communication technologies (DCTs) have shaped the way people communicate and engage with each other on matters of crime and justice. With respect to justice in particular, the widespread use of social media and availability of mobile phones with

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embedded cameras has allowed, for example, for a greater participation of citizens in crime reporting and police investigations, both as citizen journalists and *digilantes* (Ceccato, 2019; Huey et al., 2013; Nhan et al., 2017). Individuals have exploited DCTs' affordances not only to assist the police but also to monitor them, and therefore undertake counter-surveillance or – following a much used concept in the surveillance studies literature coined by Mann and colleagues (2003) – *sousveillance* (watching from below). Cameras, mobile technologies and social media sites have, indeed, allowed people to turn the surveillance lens back on the surveillers and expose police malpractices, violence and brutality. This has led to a 'new visibility' in policing (Brucato, 2015; Goldsmith, 2010), or a permanent visibility that is obtained through counter-surveillance and sousveillance tactics (Bradshaw, 2013).

The affordances of DCTs have also been exploited by networked social movements (Castells, 2012; Powell et al., 2018), which have used them not only to visually expose police brutality and the repression of dissent (Bonilla and Rosa, 2015), but also, and more generally, to campaign and raise awareness of protests (Theocharis et al., 2015; Vicari, 2013). Environmental movements are no exception to this trend: visual and textual material posted by them on social media have facilitated the emergence of unrecognised forms of environmental and ecological crimes and harms, and different framings of environmental protest (Ronco et al., 2019), often differing from mainstream media frames (Hulme, 2009).

DCTs are important to on-the-ground activist practice and should be carefully considered when addressing environmental movements' efforts to achieve environmental and ecological justice. Within criminology, the perspective of green criminology has been concerned with the study of crimes and harms affecting human and nonhuman species, the environment and the planet, ultimately seeking to spark change and restore environmental and ecological justice (White, 2008). Quite surprisingly given its focus, this perspective has relatively understudied the realities of on the ground environmental resistance and environmental movements' use of DCTs in their striving for justice (for a few exceptions, see e.g. Brisman, 2010; Brisman and South, 2013; McClanahan, 2014; Natali, 2013; Yates, 2007; Ronco et al., 2019). These areas of study are important and in need of further expansion, as they have the potential of enhancing our understanding of activist practice, which is in itself instrumental to achieving environmental and ecological justice.

This research advances knowledge on environmental movements' activist practice by exploring the reality and representations of on the ground green resistance, and their intersections with visual representations of protest on Twitter. To this end, the article relies on the case of resistance to the Trans Adriatic Pipeline, commonly known as TAP, in the Salento area situated in the southeastern Puglia region of Italy. Partly funded by the European Investment Bank (EIB), the TAP pipeline is a state-authorised project that will bring natural gas from Azerbaijan to Italy (and through it to the rest of Europe) via Turkey, Greece and Albania. Building on NOTAP groups established in Melendugno and surrounding villages since 2012, the NOTAP Movement (and, within it, locals from different demographics and backgrounds) fights the building of the TAP pipeline under the motto 'neither here nor anywhere else'.[1]

Methodologically, this article relies on qualitative research involving mixed methods including ethnographic observations, semi-structured interviews and a visual ethnography of a large collection of computationally collected and categorised images posted on Twitter. While observations and interviews allowed us to capture the reality and representations of on the ground environmental resistance, computational methods were used to facilitate analysis of online visual representations.

Relying on qualitative content analysis guided in part by quantitative visual analysis, prominent themes in online and offline representations of protest were identified and compared.

Through examining the realities and representations of on the ground NOTAP protest and their intersections with visual representations of protest on Twitter, this study contributes to various forms of criminological scholarship, including green-cultural and visual criminologies, and socio-spatial and digital criminologies.

The research places itself within a green-cultural criminology (Brisman and South, 2013) approach, which draws attention to the '*cultural* significance of the environment, environmental crime, and environmental harm' (Brisman and South, 2013: 130, emphasis in the original), including everyday street-level resistance to environmental harms and their media representations. This research contributes to this perspective by providing empirical data on 'on the ground' environmental resistance, and on activists' representations of environmental harms and protest offline as well as on social media (for activists' representations of green protest on social media, see also Natali, 2013; Ronco et al., 2019).

Scholars working from a green-cultural criminology perspective and drawing on the emerging field of visual criminology (Brown and Carrabine, 2017) have emphasised the importance of using innovative visual methodologies to explore experiences and representations of environmental harm and resistance both on the ground (Natali, 2019) and on social media (Ronco et al., 2019). This research adds to this literature by using computational or, as Rogers (2013) put it, 'digital' methods to collect and cluster visual material on environmental harm and protest posted by activists on Twitter. In particular, our innovative approach utilised custom data collection software, alongside visual object detection to automatically identify the content of images, which in turn was used to cluster the images into descriptive themes. This pre-processing made large scale visual trends manageable and interpretable for qualitative analysis. The innovative digital methods used in this study also have the potential to inform future visual and digital criminological research concerned with the study of visual representations of crime and injustice on social media (see also Powell et al., 2018).

Lastly, by exploring activist practice online and on the ground, this article also contributes to the fields of digital and socio-spatial criminology. As it will be illustrated in detail in the following sections, both these perspectives have acknowledged the porosity of the online/offline boundary and the embedded nature of technology in people's lived experience of harm and (in)justice. This study contributes to this mainly theoretical scholarship by providing an empirical examination of the intersection between online and offline representations of environmental protest.

Criminology at the online/offline intersections

Two branches of criminological scholarship known as socio-spatial and digital criminologies have so far explored the role played by DCTs in the shaping of experiences of harm, (in)justice and counter-surveillance – experiences that are also lived by environmental activists and the protesters who are the focus of this article.

Let us turn to the first branch of criminological scholarship, that of socio-spatial criminology, and, within it, to the group of writings that follows an 'ethnographic and/or "cultural criminology" approach' (Bottoms, 2012: 450). At the start of the twenty-first century, inspired by the 'spatial turn' in social theory and, therefore, by the fertilisation of the criminological field through

interdisciplinary insights, cultural and critical criminologists began to develop a more sophisticated understanding of physical space in their study of urban crime and crime control (e.g. Campbell, 2013, 2016; Hayward, 2012, 2016). From being solely in the background and taken for granted, physical space has started to be conceptualised as something that is shaped by its lived experience and socio-cultural factors (Kindynis, 2017; Persak and Ronco, 2018), and is ultimately co-produced in a continual flux (Campbell, 2013).

In their analysis of urban 'crime' and 'crime control', some socio-spatial cultural criminologists have drawn attention to the understandings and representations of space by frequently criminalised groups (such as graffiti artists) and their spatial practices of resistance. Drawing on Lefebvre, Kindynis (2017), for example, conceptualised graffiti-writing as a spatial practice that ruptures the authoritative representations of space given from above (urban planners and groups with political capital) and that ultimately rewrites the space – i.e. its meanings, ways of seeing and navigating it. Street art and graffiti have also been considered a strategy of symbolic appropriation of space and opposition to the cultural homogenisation propagated through gentrification by 'cultures of visual resistance' (Naegler, 2012: 16).

Even more interestingly for our purposes, a number of cultural criminologists (Campbell, 2013; Hayward, 2012, 2016) have addressed urban crime in both physical and digital spaces and have illustrated the porosity of the online/offline boundary. Hayward (2012), for example, considered some of the ways in which digital technologies have allowed people to exist offline and online simultaneously in what he calls 'interactional spaces', and reflected on their implications for criminology. For Campbell (2013), the process of spatial meaning-making opened up by urban crime challenges the pre-existing, and taken for granted, affective, cultural, moral, and legal meanings attached to a given space. This process is also facilitated by digital technologies: it is, indeed, through digital mediation that crime has 'capacity [. . .] to create dissonant and co-present "interactional spaces" (Hayward, 2012: 457) which blur the boundaries of actual and virtual (urban) worlds' (Campbell, 2013: 34). In other words, DCTs are key to the challenging of dominant representations of space, which shape attitudes and responses to behaviour occurring in it (see also Persak and Ronco, 2018).

On its part, 'digital criminology' (Powell et al., 2018; Stratton et al., 2017) is premised on the existence of a digital 'society' with blurred boundaries between online and offline experiences of crime and justice, and where technology and society are mutually constitutive in their nature. In essence, the idea is that digital technologies are deeply embedded in our lived experiences of crime, harm and justice, and that criminological research should account for this online/offline conglomerate (Brown, 2006; Powell et al., 2018; Stratton et al., 2017). Despite contributing important theoretical advancements, this area of criminological scholarship is marked by a relative lack of case studies empirically exploring the intersections between offline and online experiences of harm, crime, crime control and justice. One exception is work by Wood and Thompson (2018), who discussed the way in which speed cameras on highways are avoided by members of an online collective through crowdsourced countersurveillance on social media. Drawing on de Souza e Silva's (2006) concept of 'hybrid spaces' and Foucault's (1986) notion of 'heterotopia', Wood and Thompson (2018) used this case study to formulate the concept of 'hybrid heterotopias' – spaces that oppose the given dominant order and surveillance assemblage through mobile interfacing and the constant connection to the Internet and social media. As the authors put it, 'hybrid heterotopias' are 'a reconfiguration, augmentation, and contestation of everyday spaces through

interfacing with technology' (Wood and Thompson, 2018: 33). The importance given to mobile interfacing and users' constant connection to the Internet via 'hybrid heterotopias' allows these spaces to be aligned with Hayward's (2012) idea of 'interactional spaces' – spaces where individuals exist offline and online simultaneously.

Methodology

This article explores realities and representations of on the ground environmental resistance and their intersections with visual representations of protest on Twitter. In the two sub-sections below, we include information on the methods for data collection and analysis chosen for the offline and online parts of the study, respectively, and consider some of the study's limitations.

Offline

This study used ethnographic observations and semi-structured interviews to investigate offline realities and representations of environmental protest. Ethnographic observations relying on detailed field-notes were carried out over two consecutive weeks (3–17 April 2019) in the main areas where the protest rallies, meetings and cultural events against the pipeline have taken place since the start of the constructions in 2017: Melendugno's town centre and the area of San Foca, which is the pipeline's landing point in the municipality hosting the first construction site (Figures 5 and 6). Where possible (i.e. where not perceived as intrusive by the community, as in Natali and McClanahan, 2017), a visual ethnography (Pauwels, 2015) relying on photography was conducted to document visual resistance (street art, graffiti etc.). During fieldwork, the first author also attended four meetings and open events where the affected community and activists discussed topics relevant to the NOTAP protest, and carried out informal interviews with activists.

The research also relied on face-to-face semi-structured interviews with six activists, including: three key members of the main social movements protesting against the TAP pipeline (Movimento NOTAP, TerraMia, Mamme NOTAP) (interviews 3,2,5 respectively); one technical expert appointed by the municipality to oversee the construction of the pipeline (interview 4); one lawyer member of the NOTAP 'legal team' (interview 6); and one mayor among those who have overtly supported the NOTAP protest (interview 1). To explore in depth the meanings and emotions that respondents associated with the NOTAP protest in the physical spaces of resistance (particularly, at the first construction site in San Foca), some of the interviews (1 formal and 2 informal interviews) where itinerant (Natali, 2019) or involved the use of the participatory research method of walking with respondents (O'Neill, 2017). The conducted interviews (which were all recorded and transcribed), along with the pictures taken during the ethnography, were content analysed through codes or categories developed on the ground through 'open coding' (Glaser and Strauss, 1967; Strauss and Corbin, 1998).

Online

To explore representations of protest on Twitter, we collected tweets (#NOTAP tweets) via our 'Listener' tool (see Di Ronco et al., 2018) from October 2018 until the end of June 2019

(N=22,790).[2] Twitter has been selected over other social media predominantly because of the technical accessibility of its textual and visual content to all users and for its key role in the development of counter-narratives by grassroots movements, including in the Italian context (Vicari, 2013). The Listener utilised Twitter's streaming API which allows the tool to collect tweets in real-time (including re-tweets of old posts), and the API provides easy access to associated tweet metadata such as the creation date, number of favourites received and most importantly, any URL of embedded media in the tweet.

We have decided to focus on visual social media because of the growing importance of imagery on social apps and platforms not only within visual (Brown and Carrabine, 2017) and digital criminology (Powell et al., 2018), but also to the study of environmental harm and protest (Hopke and Hestres, 2018; Natali, 2019; Neumayer and Rossi, 2018; Ronco et al., 2019). As will be discussed in detail below, we explored the overall visual representations of the NOTAP protest on Twitter by analysing the content of all images posted during the considered time frame. In addition, to capture the selected visual representations of protest by activists and the specific uses they made of the posted images, we analysed the 14 most shared pictures and their visual and textual context embedded in the relevant tweets. As suggested by Neumayer and Rossi (2018), indeed, retweeted images are the result of a desire to select and put forward a specific visual representation of protest and related events.

A key issue of working with social media images is duplication. Users share the same images repeatedly, and also share slight variations of the same image. De-duplication was a key step of the process so that we could both identify what themes were most prominent across unique images, and recognise the most popular image themes. Of the collected Tweets, 1,816 contained an image URL, of these 1,322 were unique URLs pointing to different image files. Identifying images that were near identical but originated from different URLs posed a greater methodological challenge. These images were downloaded from their source servers and used to generate a hash (a string of characters determined by the binary makeup of the image file) that represented each unique image. To identify these 'hidden duplicates', the hashes of each image pair (788,140 combinations) were then compared using an implementation of Levenshtein distance[3] to generate a hash score where 0 represents completely different images, and 1 represents exactly the same. Authors then manually reviewed a random sample of 100 image pairs declaring whether the images were the same or different. This provided a ground-truth that could be used to discern what hash score should be used as the threshold to declare an image pair as the same, or distinct. As shown in Figure 1, a clear demarcation arose at a score of 0.6, indicating that any pair with a score of 0.6 or above was likely similar images originating from different sources. After dropping these duplicates, we were left with a set of 956 unique images.

The content of these images was then tagged using the Google Vision API, which provides access to Google's pre-trained machine learning models for visual object detection. Submitting an image to Google Vision returns a set of keywords representing the objects predicted to be in the image. These predictions come with a confidence score, meaning that often the confidence score can be used as a proxy for prominence of the object in an image. These scores were used as features for a k-means clustering algorithm to group images into four distinct clusters. Four was chosen as the optimal number of clusters after trials of 2–20 clusters indicated that four clusters produced the optimal clustering as determined both through a silhouette validation of the model (silhouette=0.68) and qualitative appraisal of the clusters. While the procedure produced overall
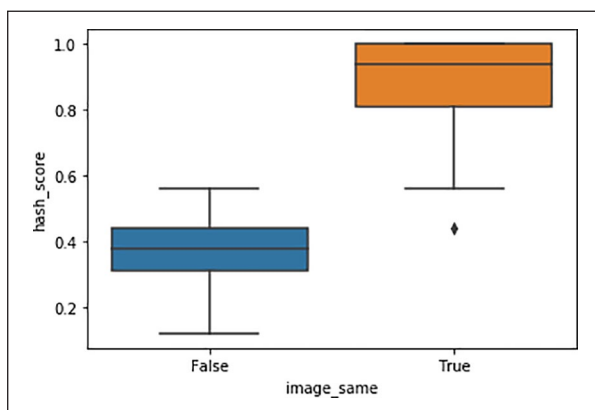
Figure 1. Distribution of image pair Levenshtein distance scores, grouped by manually determined pair similarity.

Table 1. Total number of relevant images per cluster.

Cluster and main keywords (with highest confidence score)	Images per cluster: total	Images per cluster: relevant	% of relevant images
0 - text	285	245	86
1 - event	516	412	79
2 - event/protest	121	121	100
3 - newspaper	34	34	100
Total	956	812	85

coherent clusters, often a small percentage of images per cluster will not fit the larger overarching theme, either as outliers that do not fit into any cluster theme, or as images that are close to the boundary line between clusters, and are miscategorised. These images are noted in later analysis but generally disregarded as an acceptable level of error when discerning cluster themes. The resulting unique images were 956, of which 812 were found relevant through a manual check preceding the content analysis (Table 1). Interpretative content analysis of assigned keywords and a visual inspection sample images was then used to discern cluster themes as well as filter out irrelevant images.

In the second part of the analysis, we focussed on the most frequently shared images overall. Drawing on preceding deduplication stages we were able to accurately measure share frequency even if images used different URLs or had been minorly edited, grouping together images with a similarity of at least 75% based on the Levenshtein distance of their hashes. Interpretative content analysis was applied to images that had been shared at least 10 times ($N=14$) by Twitter users, and their textual and other visual material embedded in the relevant tweets (the analysis was also performed on the embedded links, and their related textual and visual content).

To protect the anonymity of Twitter users, in line with Ronco et al. (2019), we decided not to include in this article any image or direct quote to textual content (as embedded in the sampled

tweets featuring the top used images) that would allow for the identification of these users. In the analysis, images – especially those not published by mainstream media such as online newspapers, but by private users – have been described very generally, and quotes of textual material (which have been translated from Italian) have been kept short not to allow for the identification of the tweet's author(s).

Limitations of the study

This study is subject to a number of limitations, including the time frame of the data collection (2 weeks for the offline fieldwork, 9 months for the online data gathering). The online part of the study focussed on visual content posted on Twitter under the hashtag #NOTAP, and has excluded text-based tweets not including one of the fourteen top circulated images. It has also included visual and textual content posted on other social media (mostly Facebook and YouTube) but only when embedded in the tweets featuring one of the most circulated images. As other social media, Twitter is only used by given demographics; yet, it was chosen for the accessibility of its content and its established reputation for the development of counter-narratives by social movements. Other limitations relate to the computational approach to visual analysis: the latter allows the inclusion of visual material into the analysis of online discourses only at the scale of data collection made possible by social media data. The reliance on the Google Vision API for tagging the images meant that the tags applied are literal and descriptive and do not allow for more abstract conceptual tagging such as 'violence' or 'power' that one would expect from a qualitative analysis of visual material. Key to addressing this is to ensure that the computationally derived outputs are qualitatively validated, and used as a tool to support qualitative analysis, rather than as the result in itself. The tagger was also limited in its capacity to cope with poor quality pictures such as night photos or photos with difficult to discern subjects. While some of these issues can be addressed by training your own object detection model, the production of suitable training data at the scale necessary is in itself a much larger project.

Offline

Through content analysis of the interviews and visual ethnography in the spaces of resistance, we were able to identify two recurrent themes. While one focussed on the NOTAP *protest* – and, in particular, its objects, characteristics, strategies and markers of visual resistance –, another focussed on *repression*. These themes and sub-themes are presented in the sections below.

Protest

Object of the protest. Activists challenged the TAP pipeline for it being an 'illegal', 'useless', and an 'harmful' project. According to interviewees 2 and 4, it was illegal, among others, due to the TAP company not having properly assessed the environmental impact of the pipeline. In particular, the company was accused of failing to assess the *cumulative impact* of the micro-tunnel (entering the coast and running under- and above the ground until the Pipeline Receiving Terminal in Melendugno) and other tunnels (bringing gas from Melendugno to Mesagne, 65 km north of Melendugno, where natural gas is to flow into the Italian natural gas grid) on the conservation of natural habitats, which are protected by EU law.[4]

The pipeline was also defined as a financial 'speculation' by some respondents (N 1,5,6), and as 'useless' by others (N 1,3,4), who did not believe it could provide enough gas to satisfy the annual EU demand for gas.

Interviewees also considered the pipeline harmful to the environment (including the marine ecosystem), the agriculture-based local economy, and people's health. Harm to the local economy (which is based on the production of olive oil) was associated with the removal of thousands of olive trees along the pipeline's route. Olive trees were also said to be affected by *xylella*, an untreatable bacterial disease which – many activists thought – was 'invented' by the TAP company or by Monsanto, respectively to facilitate the building of the pipeline or to have GMO varieties of olive trees resistant to the disease – and produced by them – cultivated in the area (interview 5; informal interviews). Olive trees, more in general, tend to bear a symbolic meaning to the locals: they were defined as 'our history' and 'our family' in informal interviews (see also Ronco et al., 2019).

Activists also thought that the pipeline was to affect local tourism, which was another crucial source of income for the region, and people's health, not least because the Pipeline Receiving Terminal – which experts considered at risk of explosions (interviews 1,4) – was to be located very close to the residential core of Melendugno. In general, the TAP pipeline was seen by activists as a project that did not bring benefits to the local community (in terms of e.g. employment opportunities); rather, it harmed the economy, the environment and people's health and only represented the interests of a private company allegedly colluding with the 'fascist' Italian state (interviews 1,4) and authoritarian regimes (Azerbaijan in particular) (see also Ronco et al., 2019). With a few exceptions, people in the area refused any monetary compensation for land loss offered by the TAP company and the government; as the people formally and informally interviewed suggested, they were fighting for their children and grandchildren, their land, their future ('It has become a fight for life', interview 6).

Characteristics of the protest. All interviewees described the NOTAP protest as *peaceful*: those protesting were generally families with children alongside retirees. All respondents acknowledged the presence within the movement of a few hotheads, whose potential for violence was however minimised by the majority of the group and the overall non-violent context within which the protest has taken place. National and local media, however, were said to provide a rather different representation of the movement, which was either trivialised or represented as 'dangerous' and 'anti-social'; in short, as a 'public enemy' (interview 6).

The NOTAP Movement was not described by respondents as homogeneous in its fight against the pipeline, but as embracing different associations (Terra Mia), groups (Mamme NOTAP), and individuals within them with different ideologies and ideas about the aim of the protest being undertaken. Some, for example, set blocking the pipeline as their ultimate goal (interview 2), whereas others' goals stretched well beyond the pipeline embracing any fight against injustices and inequalities, as caused by the global neoliberal socio-economic system (this ideological position was confirmed during the attended four open events organised by Movimento NOTAP). As interviewee 4 suggested:

> "We are fighting for the environmental cause but [in reality] it is about the economic system behind TAP [. . .], which privatises the profits and collectivises the harms. The principal opposition is against the economic system".

Actions against TAP were said to be well coordinated between these groups and individuals. Such actions mostly included: organised patrols and various other activities (such as walks and 'resistant' breakfast and lunches) to monitor the building progress at the construction sites; flash mobs; info-desks; and book presentations. Actions also included the Movement's participation in pertinent protests taking place in the region or at the national level, also in coordination with other environmental movements (e.g. the March for Climate and Against Useless Infrastructures in Rome on 23 March 2019). During the 2-weeks of fieldwork, among the activities that were organised by the Movement there were: a sit in by the Lecce's Tribunal to protest against the start of a criminal proceeding against 25 NOTAP activists; one book presentation on pollution caused by the steel industry; two weekly meetings; and two info-desks where information on the pipeline was disseminated and money collected through the selling of NOTAP paraphernalia such as T-shirts, bracelets, and booklets.

During fieldwork, the offices of the NOTAP Movement and Terra Mia were open allowing for the spontaneous gathering of people, especially in the evenings. According to many people both formally (N 5,6) and informally interviewed, the fight against the pipeline succeeded in strengthening social ties and increasing awareness of ecological and environmental issues, which was previously lacking. Another important result was identified by respondents in the establishment of a network of national and international associations – among the latter, there are not only the grassroots associations fighting the TAP pipeline in countries that are affected by it (Azerbaijan, Turkey, Greece and Albania), but also other international environmental organisations (incl. 350. org and Re:Common).

Strategies against TAP. Two 'concatenated' (interview 3) strategies were identified by activists as crucial in the Movement's fight against the pipeline: the *information collection and dissemination strategy*, and *the legal strategy*. Within the first one, NOTAP activists collected information on, among others, the building progress at the construction sites, the violations of the TAP company, and police malpractice, by taking pictures and recording videos with their phones. Visual material thus collected was then shared by them on various social media, including WhatsApp groups such as those dedicated to the legal team, and to national and local journalists.

As interviewee 5 put it, 'we have become journalists' through social media. According to interviewees 3 and 5, 'becoming journalists' served two different needs: that of the Movement to speak up against the pipeline in the face of media censoring and limited coverage, and that of journalists – with an increasingly reduced budget for travels – to receive reliable information on the NOTAP protest. In relation to the latter point, consider the following quote:

> "We write the press release, publish in the [WhatsApp] group with journalists, and those good-hearted among them publish it [in the press]. We record the video and take pictures because they [media organisations] don't even pay [journalists] the gasoline to come to Melendugno" (interview 5).

The communication strategy of the Movement did not simply rely on supplying journalists with reliable information; it also relied on self-generated content on social media, including press releases, the online posting of long explanatory texts, and live streamed press conferences. As interviewee 3 explained, 'these are new ways of doing journalism, very much handmade, which supersede the traditional way of doing journalism'.

Figures 2. NOTAP tag on a signpost in San Foca.

The second strategy of the Movement was the *legal strategy*. It mostly relied on the: filing of requests to access documents; reporting of violations and irregularities of the TAP company to the police and public prosecutors; assisting activists during criminal and administrative proceedings; and on the sending of petitions to relevant EU institutions (e.g. EU Commission, Parliament and Ombudsman). Most of these activities and legal actions, which tended to remain unknown to the public until they are formally filed to the relevant authorities, were supported by the work of university professors and lawyers, all working pro bono.

Visual resistance. Opposition to the pipeline through visual resistance was manifest in all relevant spaces of resistance. In Melendugno at the time of the fieldwork, NOTAP flags were hung over two bars' entrances and on the offices' doors of the Movement and Terra Mia association (which were located at the outskirt and centre of the town, respectively). In both Melendugno and San Foca, NOTAP tags and graffiti were present on walls and signposts (Figures 2 and 3). NOTAP graffiti and tags were also noticed in Lecce, the provincial capital, and on the main provincial highways (where we counted NOTAP graffiti on 5 overpasses).

In San Foca, banners hung by the Movement against the pipeline and tags were also found on a dry-stone wall in front of the first construction site (Figure 4). According to interviewee 4, these banners and tags are reminiscent of the Movement's first 'permanent garrison' (later replaced by the office in Melendugno), from which activists monitored the activities taking place inside the

Figures 3. NOTAP tag on a wall in Melendugno.

Figures 4. NOTAP banners at the first construction site in San Foca.

TAP company's first construction site. The culture of visual resistance (Naegler, 2012) produced by the combination of graffiti, tags, flags and banners in the relevant spaces of resistance, certainly speaks of people's opposition to this state-authorised pipeline, which comes to represent a more

Figures 5. First construction site in San Foca.

general process of land transformation – from an agricultural use to an industrial one (interview 1; see also 350.org, 2019). At the same time, visible markers of resistance also operate as a strategy of symbolic appropriation of a space that had increasingly been policed (see section below on repression), and – in the case of the construction sites in the countryside of San Foca (Figures 5 and 6) – militarised (see below) and limited in its access to the local population.

Repression

During fieldwork, formally and informally interviewed activists were very vocal about the harsh repression practices implemented against them by agents of plural policing, who have policed 'transgressive' or 'troublesome' protest (Ellefsen, 2018) since the start of the protest in 2017; in this case, they were the Polizia di Stato, Carabinieri, Guardia di Finanza, DIGOS,[5] and private police. Police presence in the area was perceived as pervasive and excessive, as the following quote suggests:

> "There is DIGOS videotaping everyone, I guess I am wiretapped, and [. . .] [they do so] at all events [. . .] [where] the Carabinieri, Guardia di Finanza, and police in riot gear are also present. I want to repeat it: we had up to 700-800 police officers present on the territory in the hot period. [. . .] An excessive deployment of forces to the type of protest, the number of people, and the type of people who attended [the protests], who were women, children, and old people" (interview 1).

According to respondents, police intimidation and criminalisation practices included: onerous fines (up to EUR 3,500); violence, arrests and humiliations endured during arrest (e.g. being forced to kneel for a long time while handcuffed); official and unofficial cautions, which were also notified to three activists during the time of the fieldwork; charges for vandalism, traffic block, use of

Figures 6. High fences and razor wire at the first construction site in San Foca.

force against public officials, possession of dangerous weapons, or trespass – most of which were, allegedly, invented, ill-substantiated (e.g. notified on a wrong date) or unnecessarily exaggerated; expulsion orders mostly for having taken part in non-authorised protests, or having publicly spoken at them; and place bans.

Police were also said to check people's ID and to videotape anyone who gets close to the construction sites, which were described by respondents as 'militarised': they were all surrounded by high fences and razor wire (Figures 5 and 6), and were monitored by CCTV cameras and agents of plural policing – including private police. The presence of many police forces in and around the construction sites was also confirmed during the walking interview with interviewee 4, when we saw Carabinieri, DIGOS[6] and private police presence at most construction sites. At that time, the police did not check our ID (the interviewee was a technical expert known to the police); however, they videotaped us as we walked around the first construction site, and we drove close to the site where eradicated olive trees were stored (in this case, the interviewee did not want to stop the car to avoid being stopped 'once again' by the police).

Most of the activists who we formally or informally interviewed also reported that they were certain that they had been wiretapped including through covert listening devices (which were allegedly found in the NOTAP Movement's office, according to interviewee 3) and of having their

social media accounts fall under the close surveillance of the police and the TAP company. On the activists' account, both the police and TAP had reacted to their social media posts, for example by issuing warnings (the police) or press releases (TAP). Many activists also reported having spotted police around their home and work places and subsequently feeling insecure in their homes at night. Many also felt constrained in their movements as they had been banned from towns and cities (e.g. Melendugno, Lecce) and town areas (San Foca), or had been stopped by the police in every part of Italy they visited. Many young people had pending criminal charges, which reduced their employability in a region where unemployment levels among young people are already relatively high (interviews 1,6).

According to all respondents, these techniques of repression and intimidation resembled those used against environmental movements in other parts of Italy (e.g. against NOTAV activists, who oppose the high-speed rail line connecting Lyon in France with Turin in Italy) and around the world.[7] They described repression of dissent as a strategy typical of dictatorships, 'like the ones in South America and Chile [in particular]' (interview 4), and of the fascist regime (interviews 1,2,4).

Beyond the police, other state and law enforcement actors were also believed by respondents to be involved in obstructing activists' efforts against the pipeline. The latter include public bodies (incl. Ministries refusing their requests to access documents), judges and, especially, public prosecutors, who were said to prioritise criminal proceedings against NOTAP activists and to be rather lax and negligent when it came to investigating reported irregularities against TAP ('what we've seen is an extreme dependence of the judiciary on politics. So it has done very little', interview 4). According to all interviewees, this had the effect of delegitimising state authorities and the ways of delivering justice by the legal system (e.g. 'Consider that I studied law to become a lawyer because I believed in the myth of legality. . . now the system has rotted', interview 6). Also the government, and particularly the Five Start Movement (henceforth: 5SM) within it (a populist political party running the then government in coalition with the Northern League), was delegitimised according to activists: contrary to the promise of blocking the pipeline had they been elected, this political party gave green light to the company to proceed with the constructions. As an activist put it during an informal conversation: 'I will never vote for the 5 Star Movement again; I will never vote for anyone again'.

Online

This section focuses on the content analysis of visual representations of the NOTAP protest on Twitter. The content analysis of the online material is divided into two parts. In part one (titled 'Unique images'), we addressed the retrieved relevant 812 images as organised into four clusters (see Table 1) and relied on open coding (Glaser and Strauss, 1967; Strauss and Corbin, 1998) for the construction and refinement of codes and sub-codes (see Tables 2–5 for an overview of the main codes and sub-codes for each cluster). The second part of the analysis (titled 'Top used images') focussed on the 14 most circulated images, as well as on their related tweets and their embedded visual and textual content, which allowed for the identification of the specific visual representations of protest selected by activists and for a more contextualised understanding of the symbolic meanings of pictures and their uses by activists. Both content analyses revealed the presence of two recurring themes in the sampled visual social media: one focussed on the NOTAP protest, the other on opposition to politics.

Table 2. Cluster 0 – codes and sub-codes.

Codes	Sub-codes	N	%
Against the government (149 or 60.8%)	Critique of the 5SM on TAP	73	29.8
	Critique of the governmental approach on TAP	46	18.8
	Critique of the government on broad, non-TAP-related, topics	25	10.2
	Decreased public appreciation of the 5MS	5	2
Other (96 or 39.1%)	Fight against fossil fuels and exploitation of natural resources	63	25.7
	Events	17	6.9
	Xylella	16	6.6
			$N=245$

Table 3. Cluster 1 – codes and sub-codes.

Codes	Sub-codes	N	%
Environmental and NOTAP protests (285 or 69.2%)	Public events	98	23.8
	Indoor events	30	7.3
	Other: olive trees; pipelines; NOTAP flags; San Foca's construction site etc.	157	38.1
Critique of the government (106 or 25.7%)	N/a		
Police (21 or 5%)	N/a		
			$N=412$

Table 4. Cluster 2 – codes and sub-codes.

Codes	Sub-codes	N	%
Environmental and NOTAP protest (119 or 98.3%)	Public events showing NOTAP banners	61	50.4
	Public protests	58	47.9
Police (2 or 1.6%)	N/A		
			$N=121$

Table 5. Cluster 3 – codes and sub-codes.

Codes	Sub-codes	N	%
Opposition to the government and the 5SM on TAP (29 or 85.3%)	Opposition to the 5SM	22	64.7
	Opposition to the government	7	20.6
Other (5 or 14.7%)	Xylella	2	5.8
	Reduced economic growth in Italy because of political inertia	2	5.8
	Media neglect of environmental protests	1	2.9
			$N=34$

Unique images

Cluster 0. The content of the majority of the 245 relevant images grouped in this cluster tends to be very critical of the then government – a coalition made by the 5SM and the Northern League (149 or 60.8%). Most of these images critique the governmental approach on TAP (46 or 18.8%) and, particularly, the 5SM's decision to give green light to the pipeline, despite its promises of stopping it after winning the elections (73 or 29.8%). The latter images mostly include text and photo captions criticising a number of 5SM politicians who had been particularly vocal about their opposition to the pipeline (e.g. 'you've become MPs thanks to us now resign', 'Shame on you, you were on our side!'). Other images show poll data indicating a decreased appreciation of the 5SM by the general population since the 2018 election (5 or 2%), and challenge the government on broad topics not related to TAP (e.g. TAV, vaccines, immigration) (25 or 10.2%).

Cluster 1. This second group clusters images (No = 412) mainly depicting environmental and NOTAP protests (285 or 69.2%). Many of these images represent public events and organised protests (98 or 23.8%) and portray demonstrators while for example, marching in both urban and natural contexts and holding NOTAP banners as well as banners of other environmental movements within and outside Italy. Some images have been taken at conferences, discussions and meetings held indoors (30 or 7.3%). A substantial number of pictures in this cluster (157 or 38.1%) also represent the NOTAP protest by showing, among others: olive trees (some are dead and cut into pieces, some others are eradicated and taken away by trucks); pipelines (these images tend to depict: pipes being laid down under the ground; sea gas fields; street art and drawings showing aggressive pipelines e.g. strangling an olive tree; and the TAP pipeline's route); NOTAP flags (hang on windows, traffic signs etc.); and the militarised construction site in San Foca (Figures 5 and 6). Similar to that above, also in this cluster many pictures critique the 5SM and the government mostly in relation to their decision to support the pipeline (106 or 25.7%). Lastly, twenty-one images (5%) represent the police in riot gear; five of which portray the police cordoning off the construction site where olive trees are being eradicated.

Cluster 2. The overwhelming majority of the 121 images in cluster 2 focus on protest (119 or 98.3%). These images tend to depict public assemblies and rallies, where demonstrators of all ages hold NOTAP banners (61 or 50.4%) as well as banners from other Italian and international environmental movements (e.g. from Belgium, France, Syria, and Canada, in addition to groups with banners of Extinction Rebellion and #FridaysForFuture). The messages displayed on the banners mostly address: opposition to TAP (e.g. 'No to tap neither here nor anywhere else', 'NO to TAP and all useless large projects'); the need to defend the planet (e.g. 'defend your home', and 'let's modify our lifestyle to save the planet'); and the criminalisation of activists (e.g. 'defending the land is not a crime'). Only two images (1.6%) show the police in riot gear cordoning off the construction sites in San Foca from peaceful protesters (in one, the latter have their hands in the air to signify surrender).

Cluster 3. This last cluster includes 34 images of newspaper articles – mostly their headings. For the most part (29 or 85.3%) of these articles criticise the government (7 or 20.6%) and the 5SM's decision to back up the pipeline, contrary to what it had promised during the electoral campaign (22 or 64.7%). In particular, four articles talk about a gathering in San Foca held in October 2018,

Table 6. Top used images, number of uses, and associated cluster.

Top used image number	Number of uses	Cluster
1	68	0
2	66	0
3	55	2
4	35	1
5	30	2
6	28	1
7	27	1
8	20	2
9	20	0
10	18	1
11	17	1
12	14	2
13	12	0
14	10	0

where NOTAP activists burned their poll cards together with the 5SM flag, while three of them challenge the narrative used by the 5SM to motivate their approval of the pipeline: that of avoiding paying high penalties for an unjustified withdrawal from the contract.

Top used images

There are two main themes featuring the top 14 used images (see Table 6) and the textual and visual material embedded in the tweets featuring them: (1) opposition to politics (the 5SM in particular); and (2) the NOTAP protest. These themes parallel the ones emerging from the content analysis of the images grouped in the four clusters above, which mainly addressed the opposition to the government/5SM (clusters 0 and 3) and NOTAP and other environmental protests (clusters 1 and 2).

(1) *Opposition to the 5SM* features eight images and their related content (N 1,4,8-13). These images mostly depict 5SM politicians (1,4,10,11,12), their statements (9,13), and NOTAP flags (8). The top circulated image (Figure 7) is a vignette representing one of the leaders of the 5SM, Luigi Di Maio, watching NOTAP activists burning the 5SM flag and calling for 'honesty'. This image was published by one Italian newspaper (*Il Foglio*) and was shared on Twitter 68 times. The posts containing the other images similarly attack the 5SM. For example, the tweets including images 9, 10, 11, 12 and 13, criticise those politicians in 5SM who had promised to block the pipeline once in the government. The aforesaid images include pictures of the leader Di Maio and of the then Minister Barbara Lezzi holding, or surrounded by, NOTAP flags (images 10,11,12), or their pre-election statements against TAP (images 9,13), which are all powerful in reminding the reader of their initial opposition to TAP. These images are also associated in the tweets to comments such as 'shame on you! You were with us' and 'the 5SM betrays NOTAP'. Other tweets, such as those including

Figures 7. Top circulated image featuring a vignette critical of the 5SM's shifted approach on TAP.
Source: *Il Foglio* (2018).

image 8 (featuring a child holding a NOTAP flag), speak about activists' burning their poll-ing cards and 5SM's flags during one of their meetings. The tweets embedding image 4 (a vignette with the leader Di Maio holding a game card that stands for power) joke about the alleged penalties that, according to the 5SM, Italy would need to pay should the pipeline be blocked – a narrative that is challenged by activists.

(2) *The NOTAP protest* is the central theme in the tweets containing the remaining six pictures (2,3,5-7,14). The top used image in this group (N 2, circulated 66 times, see Table 6) is a photo caption of a newspaper heading that reads as follows: 'gas will go not to Italians but to Germans, Austrians and Dutch people'. The text embedded in the posts featuring this picture speak about the 'hope' of their author(s) to contribute to the 'dissemination of truth' about the pipeline, which is indirectly described as useless for locals and Italy altogether.

The other five top circulated images in this group depict protesters holding NOTAP banners at demonstrations and are mostly used to support activists' efforts to stop the pipeline, both on the ground and on other online platforms. For example, tweets containing the second top circulated image in this group (N 3, shared 55 times), depicting activists walking together along the coastline and holding NOTAP banners, include two links: one to a 350.org petition calling on EIB to stop funding fossil fuels, and the other to a video (with English subtitles) summarising the 2 years of the NOTAP protest. In this video, images of police in riot gear at the first militarised construction site in San Foca and of NOTAP protesters are associated to the following text caption: 'despite a harsh crackdown by the Italian state and police the local community continue to organise and speak up' (350.org, 2019). Ultimately, visuals of NOTAP protesters are used in these tweets to draw atten-tion to an online petition asking EIB to stop the financing of the TAP pipeline (which is partially funded by EIB).

The remaining four images (N 5,6,7,14) also depict groups of demonstrators with NOTAP flags and banners; tweets featuring pictures N 5, 6, and 7, also contain images of the militarised construction sites in San Foca (Figures 5 and 6). All tweets featuring these four images (N 5,6,7,14) sustained activists' on-the-ground efforts to stop the pipeline: specifically, they supported the initiative of a local activist who went on hunger strike to block the pipeline (images N 5,6,7), and announced a local NOTAP demonstration (image N 14, which is an event's flyer).

At the online and offline intersections: Discussion

This article explored the realities and representations of the NOTAP protest on the ground and their intersections with visual representations on Twitter. The findings point at the similarity of these representations in their portrayal of the *NOTAP protest*, which both online and offline was presented as peaceful, opposing a useless and harmful pipeline project, and as participated and supported by other environmental organisations. Opposition to the pipeline was also reinforced through graffiti and tags in spaces of resistance, NOTAP banners and flags at demonstrations, and pictures thereof circulated on Twitter. As illustrated above (under the subsection 'Visual resistance'), NOTAP banners, flags, graffiti and tags in physical spaces of resistance operated as a strategy of symbolic appropriation of space. In particular, visual markers of resistance were used to appropriate spaces viewed as increasingly policed, militarised, and with limited access opportunities for locals, such as the areas of the construction sites in San Foca. Images depicting NOTAP banners, flags, graffiti and tags in these spaces were then circulated on Twitter (see cluster 1 above), thus extending and amplifying the contestation of everyday spaces through the use of technology. This is in line with the socio-spatial and digital criminology literatures which acknowledge the important role played by DCTs in the channelling of counter-representations of given spatial orders (Campbell, 2013; Wood and Thompson, 2018).

The use by activists of images of visual resistance on Twitter went, however, well beyond the contestation of everyday spaces and their underpinning spatial orders. As this study has shown, the sharing on Twitter of images depicting demonstrators holding NOTAP banners and flags served a very practical reason, relevant to activist technosocial practice: that of supporting both on the ground and online efforts aimed at stopping the pipeline. This finding aligns with the previous literature on the technosocial nature of networked social movements (Castells, 2012; Powell et al., 2018), which argue for the embedded nature of technology in activist practice and for the use by activists of different combinations of offline and online opportunities for activism, protest and resistance to reach the protest's aims.

Apart from a similar representation of the NOTAP protest, other recurrent themes tended to gain a different prominence on Twitter and on the ground: while repression was a prominent theme offline, opposition to the government – and particularly to the 5SM (a political party member of the then governing coalition) – emerged as recurrent on Twitter.

On Twitter, in particular, images of peaceful protesters holding NOTAP banners and banners of other environmental movements taken by activists co-existed with visual material explicitly critical of the government and the *5SM*, which is mostly challenged for not having lived up to its promise of blocking the pipeline once at the government. This is not an unusual use of Twitter by social movements, which in recent years have utilised this platform mostly to facilitate political discussion and to convey information on the protest (Theocharis et al., 2015; Vicari, 2013), which

in turn supports the movement's actions in other online platforms and offline channels (Theocharis et al., 2015).

Partially different representations and realities, however, dominated activists' on-the-ground narratives. Here, although the NOTAP protest continued to be a prominent theme and critiques to the 5SM have also emerged during fieldwork (see the sub-section on 'Repression' above), a very recurrent theme was that of *repression* – which was seldom present online (a reference to the police was only made in a few pictures in clusters 1 and 2 above, and in a video embedded in the tweet(s) containing the third most circulated image). During interviews and general on the ground fieldwork, activists' narratives focussed very much on the harsh criminalisation practices implemented against them since the start of the NOTAP protest. By contrast, activists' lived experiences of repression and intimidation by agents of plural policing did not emerge as recurrent in the analysis of Twitter posts. Tweets on police repression were however very typical in 2017, when violent clashes between the police and protesters took place and were reported by activists on Twitter (Ronco et al., 2019). At that time, violent police repression was an immediately relevant issue and involved a spectacle of violence and repression, which – when present – tends to dominate the content of the most circulated images on protest events (Neumayer and Rossi, 2018). Indeed, as Ronco et al. (2019) indicated, visual material posted by NOTAP activists on Twitter in 2017 show police in riot gear violently pushing and clubbing activists with batons. By contrast, during the time frame considered in this research, typical forms of police repression did not configure such a spectacle: it was mostly expressed through fines, criminal charges, cautions and place bans against individual activists. We would suggest that repression is often only visual within certain circumstances, and much repression is inherently invisible until activist action, such as embodied demonstrations, coerce that repression to manifest as a physical and therefore visual form. Lastly, the relative lack of visual social media on repression in the analysed Twitter data can also be the result of intentional efforts by activists to avoid having their protest associated with violent acts and their grievances pushed in the background (see also Neumayer and Rossi, 2018). Such a dynamic would warrant further study to fully elaborate.

Other important differences emerged between the online and offline parts of the study. Offline, for example, activists discussed their two adopted main tactics of resistance, that is, the information collection and dissemination strategy and the legal strategy. These strategies did not emerge as obvious on Twitter. As the interviewed activists suggested, the *information collection and dissemination strategy* was based on a strategic use of technology by activists-journalists to channel counter-representations of environmental harm and protest, including through posts and live streamed press conferences on social media. This use of technology by NOTAP activists once again evidences the technosocial nature of networked social movements (Castells, 2012; Powell et al., 2018). Activists-journalists also reported having made a strategic use of mobile cameras, social media and apps (WhatsApp, Facebook and Twitter) for the crowd-sourced counter-surveillance of law enforcement and the TAP company, which were both carefully monitored in their moves. This reported use of DCTs is coherent with the notion of 'hybrid heterotopia' as elaborated by Wood and Thompson (2018), which configures phones, social media and apps as mediated spaces allowing individuals to enhance their efforts towards the challenging of highly order and controlled spaces; it also aligns with the existing literatures on socio-spatial and digital criminologies (e.g. Campbell, 2013; Hayward, 2012; Powell et al., 2018; Stratton et al., 2017), which view the online and the offline spaces as inextricably

intertwined with vanishing or extremely blurred boundaries between them. Although in our research on Twitter we could not find any evidence of the use of DCTs for the crowdsourced counter-surveillance of police and corporate misbehaviour, some examples of the period prior to the data collection were pointed at us by activists.[8]

In addition to this, the *legal strategy*, which is mostly based on the challenging of the TAP project's legality and on defending criminalised activists in court, also did not emerge in the analysis of online material. This is quite understandable given that, as suggested by activists during interviews, legal initiatives tend to remain tactically hidden until the relevant lawsuit is filed. Fear and the affective wash shaping activists' daily lived experiences while navigating the urban and natural space also remain unknown to the online user.

In summary, this research revealed the presence of some differences between offline and online realities and representations of protest. Mostly, these differences were related to the inherent secrecy of some of the protest's strategies (e.g. its legal strategy), and to the specific ways in which activists tend to use Twitter – that is, to foster debate and convey information on the protest's aims and agendas (Theocharis et al., 2015; Vicari, 2013).

The identified differences between offline and online realities and representations, therefore, add a nuance to the digital criminology literature that conceptualises justice as a technosocial practice within a digital 'society' of blurred boundaries between online and offline spaces (Powell et al., 2018; Stratton et al., 2017). As this research has shown, technology has certainly an embedded nature in activists' lived experiences of (in)justice; yet, the realities and representations of these experiences 'on the ground' may not always correspond to the representations conveyed through DCTs, and on Twitter in particular.

Conclusive thoughts

By relying on the case study of the #NOTAP protest and on a mixed-method approach, this article analysed the realities and representations of on the ground environmental resistance and their intersections with visual representations on social media, and demonstrated that only a partial overlapping existed between them. When this overlapping was found, it mostly addressed information on the protest, which – both on the ground and on Twitter – was described as peaceful, opposing a useless and harmful pipeline project, and as participated and supported by other environmental organisations. Similar online and offline representations of the NOTAP protest through visual resistance and images thereof circulated on Twitter, also revealed the embedded nature of technology in activist practice. As illustrated in the article, indeed, images of on the ground visual resistance were used by activists on Twitter to extend and amplify the contestation of everyday spaces, and, most importantly, to support both on the ground and online initiatives to stop the pipeline.

Yet, there were differences in the recurring themes emerging from the online and offline analyses. These differences had mostly to do with the inherent secrecy of some of the protest's strategies (e.g. its legal strategy), and with the specific ways in which social movements tend to use Twitter – that is, to convey information on the protest and foster political discussion (see Theocharis et al., 2015; Vicari, 2013). These results, therefore, add a nuance to the digital criminology literature premised on the existence of blurred boundaries between online and offline worlds (Powell et al., 2018; Stratton et al., 2017): lived experiences of harm, control and justice

may well be digitally mediated, yet their realities and representations on the ground may not always coincide with those articulated through DCTs, and on Twitter in particular.

The findings of this research also point at the importance of combining research on visual social media with ethnographic fieldwork on-the-ground: while the former allows for the collection of information on the protest and visual political opposition, the latter captures the complex nuances and affective textures of lived experiences of resistance in the urban and natural space, which may often be neglected, or intentionally be hidden, in online spaces. Ultimately, the findings also suggest that within green-cultural criminology there is much scope to develop innovative visual and digital methodological approaches to the understanding of technosocial green resistance. Our hope, therefore, is that this research will inspire other case study research where the intersection between harm, justice and the environment will be empirically examined both online and on-the-ground through mixed methods and innovative visual and digital techniques. The use of these innovative methodologies may, indeed, go a long way to improve our understanding of people's suffering, and their efforts of reducing harm to themselves, human and non-human species, the environment and the planet altogether.

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Notes

1. For the NOTAP Movement's history, see https://www.notap.it/storia/.
2. The project's toolset is available at: http://researchdata.essex.ac.uk/119/
3. https://github.com/seatgeek/fuzzywuzzy.
4. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
5. Polizia di Stato and Carabinieri are the two law enforcement bodies providing the main police services at the local level. Guardia di Finanza is a militarised police force under the Ministry of Economy and Finance, while DIGOS is a law enforcement agency investigating serious crime cases, involving, for example, terrorism and organised crime.
6. According to activists, DIGOS officers are recognisable for their casual clothes and their use of video cameras.
7. International eco-justice movements confirmed this during the international workshop on 'Policing extractivism: security, accumulation and pacification', which the Movement co-organised in Melendugno between 5 and 7 October 2018.

8. For an example of crowdsourced counter-surveillance of the police, see http://www.lecceprima.it/cron-aca/diretta-live-di-un-poliziotto-su-facebook-scatena-la-polemica-dei-no-tap.html.

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