



UNIVERSITÀ DEGLI STUDI DI PADOVA
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Framing media impact on human-wildlife conflicts:
the case of problematic bear M49/Papillon in
Trentino Region.

Supervisor
Prof. Barbara de Mori

Co-Supervisor
Elena Mercugliano

Submitted by
Maria Sofia Soler Cornero
Student n.
2014393

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SUMMARY

It is a tough time for bear conservation in Italy these days. The possibility of human-bear coexistence is being questioned more than ever and what seemed to be a successful project in terms of bear repopulation (1999's "Life Ursus") is now being criticized because - according to the "Rapporto Grandi Carnivori 2020"- today they are surpassing 100 subjects, a figure that is raising a lot of controversy (Tosi, 2015). M49 Bear, also known as "Papillion" is one of the subjects that raised the alarm about bear presence. Not only by turning out a confident animal, but because he escaped twice from the center where he was captive and became a mediatic hit. Previous studies have reported how general public perception of wildlife can be shaped by the media, in particular when they report rare events and accidents, like attacks or deaths (Sabatier and Huveneers, 2018). The aim of this thesis is to analyze relevant information obtained from media reports about human-bear conflict in Trentino with M49 as main protagonist. In this research a total of 318 online reports from 207 newspapers published in 21 countries were collected. Journal characteristics, stakeholder representation, pro-conservation contents and opinion about releasing or suppressing M49 were processed. Results show that among stakeholders, expert (scientists') opinion is not equally represented in comparison to politics or environmentalists. "Mediatically" speaking, if we want to enhance conservation policies, we need more pro-conservation content in popular journalism, more technical opinions and more engagement between stakeholders otherwise conservation won't be successful in the long term.



FIG.1. Papillon photographed on the snow in Monte Carega (TN) after hibernation, April 2020. "Who are these plantigrades? What do they represent to the women and men who fight in their name and tear down their cages?" Citation from Amedeo Policante's "Ursine wars: Alpine imaginaries and animal genealogies in the Trentino region" for animaloci.org.

1. INTRODUCTION

1.1 *Ursus arctos* biology and behaviour

European brown bears (*Ursus arctos arctos*) is a subspecies of the northern hemisphere brown bear (*Ursus arctos*) native to Europe, from the Iberian Peninsula to Scandinavia and Russia (IUCN, 2013). In Italy there are three distinct small populations of brown bear: one in the Central Alps, with a central nucleus in western Trentino, another from Treviso area to Friuli Venezia Giulia towards Slovenia and the third in the central Apennines, concentrated mostly in the National Park of Abruzzo, Lazio and Molise (IUCN, 2013). In Italy's IUCN (International Union for Conservation of Nature) Red List they appear in Critically Endangered status. Brown bears are mammal plantigrades that belong to the Carnivore order but their diet is omnivorous and varies according to food availability and seasonal requirements (Vedovelli, 2022). They can feed on grasses, roots, bulbs, fruits, nuts, berries, tubers, fungi, larvae, insects, honey as well as other mammals and fish. Occasionally, they may eat carrion or hunt domestic animals. Brown bears are characterized by being habitat generalists and they prefer more rugged territories and complex forest ecosystems in the altitudinal range between 300 and 1.600 m asl (IUCN, 2013; Mustoni, 2004). Solitary animals, their home range (extension of territory in which they acquire necessary resources for their biological requirements in life) can vary (Dahle and Swenson, 2003; Swenson et al, 2020). Its extension depends on food, reproductive aspects as well as bear population density, ranging from 120 to 1600 km² for males and 60 to 300 km² for females but some have reported even larger areas like 2,600km² (Ćirović, 2015; Dahle and Swenson, 2003; IUCN and SSC; Swenson et al, 2020). Generally, bears try to evade human contact but their temperament can be unpredictable. They can be aggressive towards humans if they are engaged in food searching or when females feel her cubs are threatened. (ABW) Although their eyes are small in relation to their head and eyesight isn't their most valuable sense, smell is their main guide, being able to perceive odors 2-3 km away from the source (ABW). Regarding their cognitive abilities these plantigrades have -among other carnivores- a big brain in relation to their body size and are able to engage in tool use (ABW). As predators, they are important in deploying-top-down control on ecosystem processes (Dorresteijn, 2014) as well as having a role in seed dispersion (ABW). Their absence in original ecosystems could lead to cascading effects, altering ecological system services (Neri, 2021; Treves and Karanth, 2003). A plus of bear presence is to provide emotional, recreational, and cultural benefits to society -if well managed- (Dorresteijn, 2014). One of their most outstanding

characteristics is their individuality not in terms of solitude, but “persona”. According to some bibliography, important differences in behavior among bears suggest that each has its own personality (Bombieri et al, 2021; Fagen and Fagen, 1996; Linnell, 1999). The fact that they behave differently from each other can give us hope in terms of human-big carnivore conflict to consider some undesired behavior the exception and not the rule.

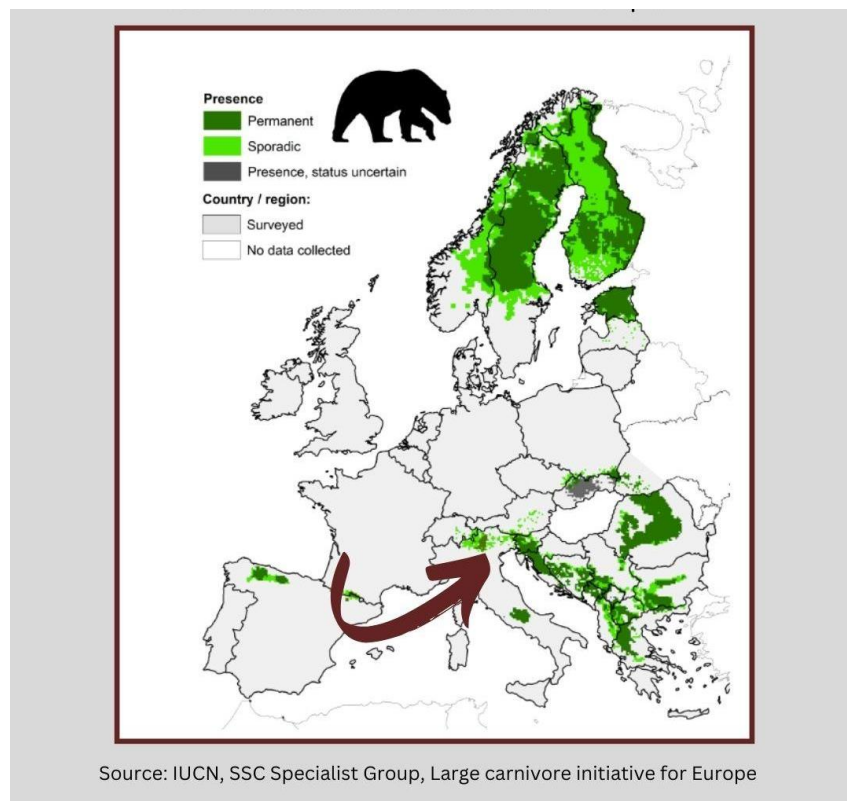


FIG.2. Brown bear distribution in Europe. The whole alpine bear population includes Italy, Switzerland, Austria, and Slovenia. The arrow indicates the area we focus on.

1.2 Bear presence in northern Italy

Until the early twentieth century, both Austria and Italian governments awarded monetary prizes for every bear killed in a hunt. Because of their persecution, deforestation and land conversion by the early 20th century, only one Alpine bear (*Ursus arctos*) population remained in the Trentino region of the Italian Alps. By the 1990s, even this population was threatening to go extinct with only 3 or 4 bears remaining. In 1999 the project “Life Ursus” was implemented to reintroduce the brown bear. Coordination between the Adamello-Brenta Nature Park, the Autonomous Province of Trento and the Italian Institute for Environmental Protection and Research (ISPRA) plus the financial support of the European Community made it possible. At that time, according to the “Studio di Fattibilita” the reintroduction project got a 70% of approbation in an opinion survey done to 1500

habitants of the area the bears were supposed to establish. During the period 1999-2002, brown bears from the Slovenia population were released in Trentino. Ten individuals (3 males and 7 females aged 3 to 6 years) were chosen to recreate a bear population of 40-50 individuals in 20-40 years. Regarding the expected number of bears, the project was successful and today they are surpassing 100 subjects according to the Rapporto Grandi Carnivori 2020. But the growing number of bears and their broader distribution made it necessary for the Autonomous Province of Trento to update regulatory, procedural and organizational measures with the aim of best responding to new needs in terms of bear management. In 2008, the plan of action for bear management known as "PACOBACE" written by ISPRA and the Ministry of Environment was approved. Precisely, in recent years, conflicts with bear presence have become more frequent and applying PACOBACE 's protocol has implied the capture or suppressing of some individuals.

1.3 Human-Bear Conflict & Damages

Even if some large carnivores are demonstrating to be able to adapt to human-modified landscapes, and may even change their behavior in order to avoid humans (Chapron, et al., 2014; Bombieri et al., 2021), others have turned out to be excessively confident, violating human property boundaries and taking advantage of easier available resources. In general, beehives seem to be the most affected resource, followed by livestock, being sheep and goats the most attacked farm animals. (De Vivo, 2023; Tosi, 2015) Correspondingly, 38% and 35.4% of the damaging events during the period 1999-2017 (De Vivo, 2023; Tosi 2015). Other types of conflict besides visiting settlements are close encounters that end in attacks, road accidents (at least 52 road accidents involving bears have been reported since the start of the project) (De Vivo, 2023); and bears searching for food in garbage bins close to inhabited areas. A secondary issue and probably consequence of the other conflicts are illegal killings, which started to happen at least since 2013. (De Vivo, 2023; Tosi, 2015).

Human-wildlife conflicts (HWC) happen whenever an action by humans or wildlife has an adverse effect (Kansky and Knight, 2014). In this case, whenever bears generate conflict interfering with or having an impact on human interests, far beyond the ecological dimension, like matters of health, culture, wellbeing, and economics (Swan et al., 2017). Even though issues with large carnivores go back to ancient times, it seems the threshold for human tolerance seems to get shorter (Neri, 2021). Unfortunately the coexistence problem came to its apex last summer, when a runner was fatally attacked by a female

bear, JJ4, who was later on captured and nowadays is captive at one of Casteller's enclosures.

Undesired individuals enter a more vulnerable zone for conservation, and they also drag their own species with them. Human-large carnivore conflict is the main barrier to bear conservation -in this case- and attacks on humans represent the worst manifestation of such conflict (Nanni, 2020).

The problem is currently everywhere the species is present, but seems to have become worse in areas where carnivores have returned after being absent for a long period of time (Linnell et al, 1999; Pacobace 2010; Chapron, et al., 2014; Bombieri et al., 2019). In fact, PACOBACE already considered and defined two categories for undesirable - usually called "problematic"-but likely to appear subjects: harmful and dangerous (Pacobace, 2010). The "harmful" category bears are those that basically damage resources or kill cattle on repeated occasions (mostly caused by an increase of confidence, thus called "confident" bears as well). Instead, "dangerous" bears can be identified as such when they don't try to avoid human presence anymore because they have become too habituated to it or in particular occasions when encounters happen such as mother bears protecting their cubs.

M49/Papillon is a unique case and has represented a real challenge for all stakeholders as he became the most popular bear in Italy without attacking humans directly but causing significant economic damage (Ispra-Muse, 2021). In 2019 the 30% of damages were attributed to him only (Neri, 2021). Between 2019 and 2020, he entered to cottages on 49 occasions plus tried to enter another 18 times (Zibordi, 2023). He was responsible for attacking bovines and equines, two species which are difficult to protect (Ispra-Muse, 2021; Zibordi, 2023). Only fixing the enclosure from which Papillon broke out meant spending around €162.000, which equals to €10.000 more than all the damages caused by all the bears in one year (Neri, 2021). To this we shall add annual damages compensation and prevention costs (that is directed against wolves as well) (De Vivo, 2023). Although the emergency squad tried to apply dissuasive methods (32% of interventions in 2018 and 23% of the interventions in 2019) these were not successful to modify M49 's behavior (Ispra- Muse, 2021; Zibordi, 2023).

1.4 Problematic bear management: species VS individual.

Usually there are both proactive and reactive measures to apply for predator management apart from the damage compensation. The first ones (proactive) are addressed to humans

and include disposing safely of food resources, putting fences and using guardian dogs in addition to educational aspects (Neri, 2021). On the other hand, reactive measures are directed towards modifying bear habits, which requires immediate action to obtain positive results and are mainly based on aversive conditioning treatments (Neri, 2021). When such don't work, the following step might involve the removal of the subject for which lethal or non-lethal methods can be chosen (Swan et al., 2017). The three main types of non-lethal removal are translocation, re-location and captivity. Translocation (moving the individual outside its home range) or re-location (moving the individual within its home range) have not been used in Trentino so far and they don't provide a definite solution (IUCN, 2019). Captivity at Casteller center has been the measure applied so far but not without backlash. The last and most radical option consists of culling. So, it is quite complex to try to mitigate human-wildlife coexistence clashes and an effective management requires comprehension of many aspects such as the ecology of the problem, the animals by themselves and the wider social context (Swan et al., 2017). On the other hand, not managing actual or perceived impacts not only can lead to social pressures and drastic political decisions but also towards bitterness in conservation efforts and what is worse, more probability of wildlife illegal killing (Swan et al., 2017). In spite of everything, when the targeted animal has gained certain sympathy among the public, captivity or suppression can bring controversy (Swan et al, 2017). Just like the famous bear M49- "Papillon". Originally named M49, sympathizers re baptized the plantigrade to a friendlier name and started calling him "Papillon", as he reminds of the famous Henri Charrière's French character that escaped from prison twice (Zibordi, 2023). Governor Fugatti order to suppress the individual provoked one of the most polemical and strong reactions by animal rights groups (Neri, 2021). Even though M49 did not attack any human, it was individualized as a subject whose behavior was problematic for human-bear coexistence and considered to be dangerous for being able to break barriers and run free. Of course the only recoil wasn't from the animal activist sector. For example farmers also claim justice, as economic reimbursement doesn't repay for the time or human effort of taking care of their livestock or beehives, nor for the fear or frustration about bear abuse. And here is when one bear's presence can threaten the tolerance towards the whole species. Precisely, when a whole bear population is at risk of being accepted because of a reduced number of "problematic" bears, it may be necessary to pose the question: "targeting only those subjects can save the rest of the bear population, thus: conservation efforts?" Swan mentions that "concentrating management efforts upon fewer,

specific animals could incur reduced ecological, social, ethical, and logistic costs” (Swan et al., 2017) There are advantages to this, such as minimal stress to other individuals and reduced impact from an ecological, social and ethical point of view and last but not least, reduced logistic costs (Swan et al., 2017).

1.5 Impact of media on conservation & transcending individuals: M49.

Since today's media competition leads journalists to focus on attractive news using impressive titles to attract readers, “problematic” bear stories have become suitable material for attractive headings (Bombieri et al, 2018). Previous studies have reported how general public perception of wildlife can be shaped by the media, in particular when they report rare events and accidents, like attacks or deaths (Sabatier and Huveneers, 2018). The media shapes readers’ responses and perception of events, framing news in different ways, giving emphasis to certain aspects instead of others (Zillmann et al., 2004). This can lead in some cases to a misrepresentation of some of the stakeholder's perspectives, which can end up producing bias in people’s opinions (Kansky and Knight, 2014; Bombieri et al, 2018; Vosoughi et al, 2018, Trainotti, 2021). Precisely, it’s been studied that human tolerance is linked to the level of risk perceived by people toward large carnivores (Knopff et al., 2016; Trainotti, 2021; Treves and Karanth, 2003). Fear can lead the public to easily support more radical control of predators (Meeuwig and Ferreira 2014; Trainotti, 2021). But if mass media plays a crucial role in shaping public opinion and perception (Zillmann et al., 2004), it can influence human tolerance towards wildlife as well and thus bear conservation (Bombieri et al., 2018; Nanni et al, 2020). In other words, journalism could play a crucial role in the fate of these species (Barua, 2020; Ripple et al., 2014, Nanni, 2020). Also, good communication is key against fear as a fearful population may be prone to commit illegal killings, hindering conservation practices in the area, as it already happened in other European nations and in Italy, both in the Central Alps and Apennines in the past. (De Vivo, 2023). Papillon could be considered a representative of a flagship species by becoming a mediatic hit for escaping twice from the Casteller center where he was secluded by orders of Trentino’s local government and all the contrasting emotions this aroused (Jarić et al., 2023). His story has provoked a massive media backlash as well as animalists’ turbulent reactions, political figures confrontations, a wide array of opinions and many questions (Zibordi, 2023). Diverse interests, ideals, misinformation, reputations, political declarations among other factors are at stake.

But whatever the side stakeholders can assume, as a matter of fact there is a kind of grey zone regarding the problematic bear resolution. At least one shortfall is that little or no information is being given to the public explaining why the selective strategy is being used, the benefits it brings and nothing is being mentioned about an integral ecosystem vision. Another deficit could be in the Pacobace plan itself, as it was written during a time when human-bear conflicts were less common (year 2010). Although it mentions measures to be taken once “problematic” bears come under the spotlight, scarce or none is said about the final destination of the ones that will be kept captive. Considering every subject is unique, is it time that maybe resolutions are taken in view of each bear's characteristics and context?

This research aim was to assess the impact of the “Papillon” story in the media, to lighten up the perspective of the variegated stakeholders involved in the human-bear conflict regarding what the destination of M49 should be, considering it as the major representative of his species.

	Atteggiamento	Grado di problematicità	Azioni Leggere	Azioni Energetiche
1	orso scappa immediatamente dopo un incontro ravvicinato			
2	orso si solleva sulle zampe posteriori durante un incontro			
3	orso si allontana dalla sua area di frequentazione abituale		a	
4	orso viene ripetutamente avvistato		a	
5	orso staziona in vicinanza di apiari, allevamenti di bestiame o capi incustoditi		a-b-c-d-h-g	i
6	orso frequenta le vicinanze di case da monte e baite isolate		a-b-e-g-h-g	i
7	orso viene ripetutamente avvistato a brevi distanze		a-b-h-g	i
8	orso staziona in zone attraversate da strade e sentieri frequentati		a-b-h-g	i
9	orso causa continui danni lontano da strutture abitate		a-b-f-h-g	i
10	orso causa danni nelle immediate vicinanze di abitazioni		a-b-e-f-g-h	i
11	orso si lancia in un falso attacco perché colto di sorpresa, per difendere i propri piccoli o per difendere la sua preda		a-b-h-g	i
12	orso è ripetutamente segnalato vicino a fonti di cibo di origine antropica		a-b-c-e-f-h-g	i
13	orso è ripetutamente segnalato in centro residenziale o nelle immediate vicinanze di abitazioni stabilmente in uso		h-g	i-j-k
14	orso provoca danni ripetuti a patrimoni per i quali l'attivazione di misure di prevenzione e/o di dissuasione risulta inattuabile o inefficace		g	i-j-k
15	orso attacca (con contatto fisico) per difendere i propri piccoli, la propria preda o perché provocato in altro modo		a	i-j-k
16	orso segue intenzionalmente persone		a-b	i-j-k
17	orso cerca di penetrare in abitazioni, anche frequentate solo stagionalmente			i-j-k
18	orso attacca (con contatto fisico) senza essere provocato			i-j-k

FIG.3.The Pacobace behavior criteria list to classify bears problematically. M49 violated items 13 (was repeatedly found inside or close to inhabited settlements), 14 (provoked damages to patrimony and dissuasive measures are inefficient) and 17 (tries to enter huts which are used only seasonally). “M49 is a problem”. And it is because it has crossed that thin line between the rules of nature and social rules.” Citation from Giovanni Battistuzzi ‘s “ M49, l'ultimo libertario” for Il Foglio Quotidiano (www.ilfoglio.it).

2. OBJECTIVES

General:

Analyze how the media described and presented the human-bear conflict regarding M49/Papillon with the purpose of understanding how the argument is being dealt with and providing useful insights that can contribute to conservation efforts.

Specific:

-Report the profile of the journals from where the articles came from focusing on country of origin and circulation.

-Review how the issue of human-bear conflict was dimensioned regarding sensationalism, contents supporting conservation measures and/or explaining conservation measures strategies plus the popularity of the “Papillon” name given by supporters.

-Scrutinize if there was an equal stakeholder representation in the media, what each of them thought should be done with “problematic” M49/Papillon bear and if they agreed on this.

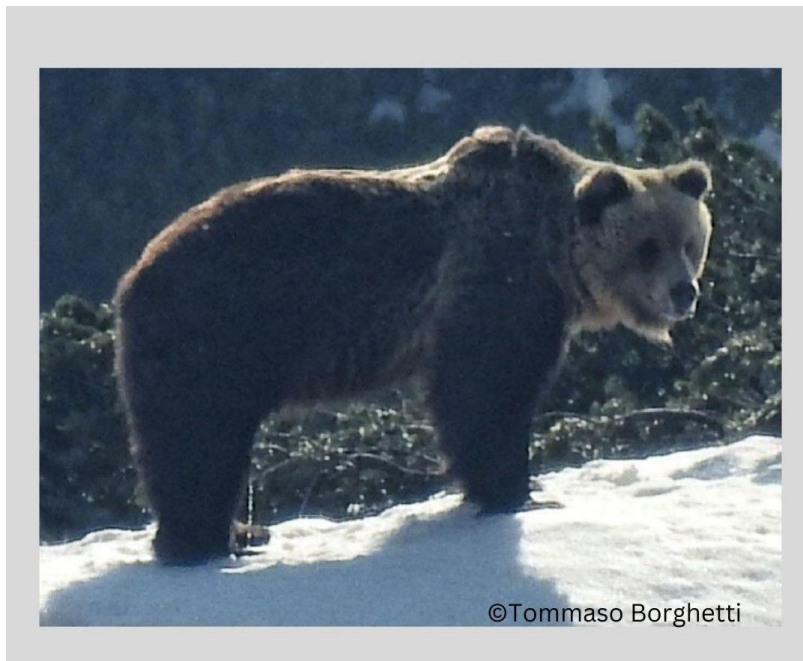


FIG.4. Papillon photographed in Monte Carega (TN). "The government must be able to safeguard the personal and economic security of local communities while, at the same time, defending the rights of these iconic animals to roam their historic territory. It's a very tricky balance." Citation from: "Cohabitation: Bears and humans" (olivosantabarbara.com).

3. MATERIALS AND METHODS

3.1 Data source and sampling time frame

During the year 2021, I reviewed online media reports regarding M49/Papillon bear which included items from newspapers, thematic web pages, blogs and media news agencies in three languages: Italian, English and Spanish. The keywords used were the following: “M49”, “Papillon”, “bear” and the instrument was Google advanced search (starting with the link: https://www.google.com/advanced_search). The years contemplated in the research were 2019, 2020 and 2021. So, on every occasion, after specifying the keywords, I selected the temporal interval which were 1/1/2019 – 12/31/2019, 1/1/2020-12/31/2020 and 1/1/2021- 12/5/2021, using the “custom range” tool. The reports that belonged to the first ten Google pages that came out were the ones processed. Considering the interest was in media perception of M49 bear related issues, scientific articles were not included.

3.2 Media analysis sections and coding

Media contents processing was divided into three sections, the first one being the characteristics of the data source. The following variables were considered: (a) title, (b) date, (c) journal name, (d) newspaper circulation and (e) country of origin. For security reasons, last access, date and URL address were included in the registration. As for circulation (d), it was classified in three levels: international, national or local depending on their estimated audience and popularity. Newspaper circulation was classified as ‘local’ if their total circulation (paper + online) was below 50,000 copies, and as ‘national’ if it was above 50,000 copies, searching the total circulation on each newspaper webpage and cross-checking this on the 2017 Assessment for Press Circulation provided by the society “Accertamenti Diffusione Stampa” (ADS) SRL.

To define newspaper circulation as international the World Press Trends 2016 News was used. Whenever a newspaper did not appear in these reports, the information found on each newspaper's website or on the Wikipedia newspaper trend page was employed. Blogs and unknown animal association websites articles were considered local.

The second section of analysis was related to conservation aspects and how the topic was presented. The following variables were considered: (e) if the text had sensationalistic content or not (in terms of words and drawings or pictures that explicitly showed predator “weapons” -like claws or teeth- or included striking details of prey ‘s injured parts of the

body) and the words were specified as well (See annexes). 'Sensationalism' was assessed using the definition given by Uribe and Gunter (2007): "a characteristic of the news-packaging process that places emphasis upon those elements that could provoke an effect on the human sensory system". An article was not considered sensationalistic if the author used the selected words rhetorically or ironically. Secondly, it was analyzed if the article promoted bear conservation somehow (f). A report included pro-conservation messages if it mentioned: 1) the importance of bears for ecosystems; 2) the species extinction risk; 3) reasons for safeguarding bears; 4) bear conservation projects; 5) advice on how to prevent damage caused by bears or how to behave in the presence of bears, 6) advice on human-bear conflict mitigation.

Another variable (g) was whether individual bear capture was motivated as a practice to safeguard the whole species or not, in a way that individual reputation of problematic bears doesn't generate rejection to bears in general. A report had a communication gap if it did not include scientific explanations regarding possible management choices regarding M49. For example, motivate the bear capture/suppression as an intervention to safeguard the entire population.

In addition, the variable (h) "Papillon" was included to determine if the article mentioned the bear's popular-given name by its supporters or not.

The third section consisted in the stakeholder scrutiny. The subsequent ones were considered to be the most relevant: residents, farmers, hunters, tourists/recreationists, animalists, environmentalists/NGOs, scientists, politicians, managers, ambassadors. An "others" category was intended for adding other stakeholders that might turn out relevant. With "farmers" it is not only intended for those keeping cattle but also those practicing apiculture or elaborating other products in mountain settlements. The "managers" category basically corresponds to rangers. For each, we evaluated the variables: "free" or "kill" and "agreement". More specifically, "free" was to mark if they thought the bear had to be let free, "kill" literally referred to the bear being suppressed and "agreement" was to register if, in case more than one stakeholder of the same category was mentioned, they had the same opinion.

Data was analyzed qualitatively - which is usually the method used to analyze texts and documents- using Windows Excel.



FIG.5. Photo from ladige.it. Although there was little sensationalism in headlines, this was one of the M49 photos that were more frequently found in mediatic articles. It does show the prey but no open wounds can be seen close enough.

4. RESULTS

4.1 Report origin & circulation

A total of 318 online reports from 207 newspapers published in 21 countries were collected. Most of the reports were published in Italian newspapers (n=254, 80%), followed by U.S.A (n=18, 5.6%) and U.K. (n=16, 5%). In the Spanish language, newspapers from Spain were most frequent (n=5, 1,2%). News was published by national newspapers (n=148, 46.5%), closely followed by local (n=142, 44.7%) and international (n=28, 8.8%) ones.

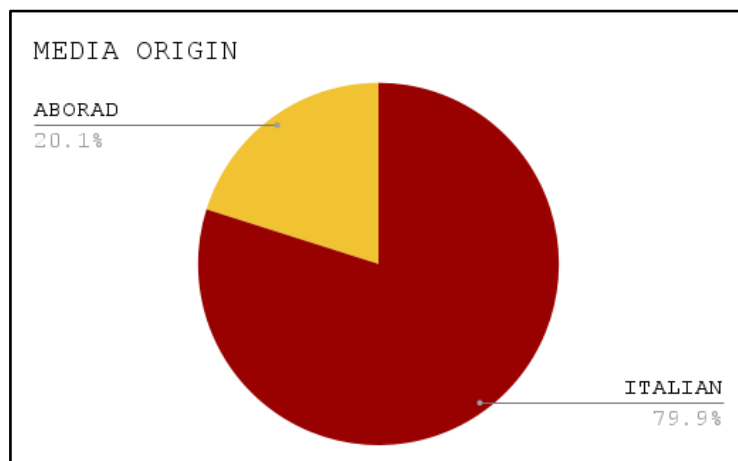


FIG.6. Media origin representation according to country of provenance. Expectedly, reports from Italian sources predominate. However, coverage by other countries was significant.

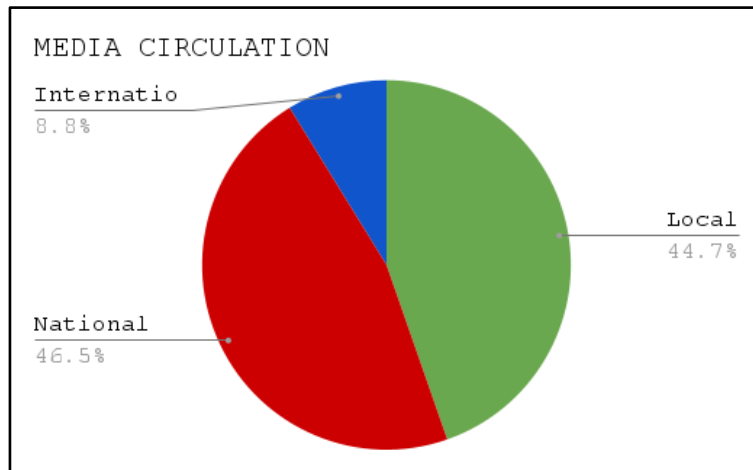


FIG.7. Media circulation representation according to the number of copies distributed and popularity of the source.

4.2 Report content

Sensationalism was present in a small percentage (n= 18, 5.6%) and the name Papillon was used in the majority of reports (n=268, 84.3%). Featured words found were: “orrendo”, “ucciso”, “infernale”, “terribile” and in more than one occasion “sbranare”. In English “beast”, “terrorized”, “carnage” and “slaughtered”. Pro-conservation contents were found in 65 reports (20.4%) while only a few online reports discussed motivations behind management choices (n=5, 1.7%).

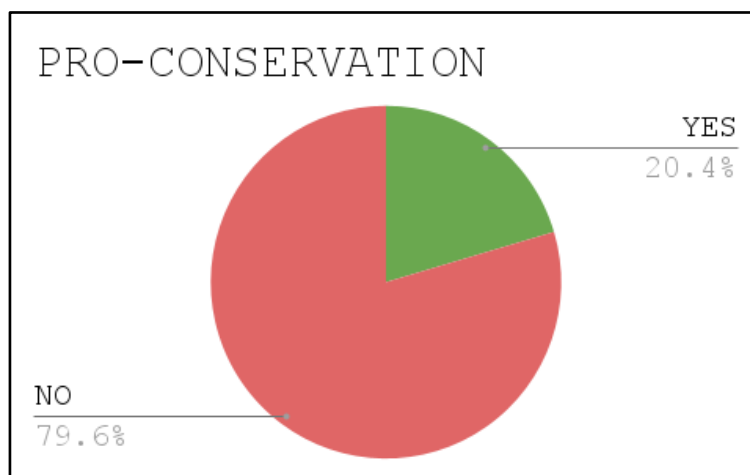


FIG.8. Graphic representation of the proportion of reports that included or not pro-conservation information.

4.3 Stakeholders prevalence and their opinions

Stakeholder's representation in the media was far from homogeneous. Politicians were protagonists with an 80.5% (n=256) of appearance. When articles included opinions from more than one politician regarding what should be done with M49 (suppress or let free) in 40% of cases they disagreed. Secondly, managers were the most named stakeholder after politicians (n=195, 61.3%) but only ten reports out of 195 included a manager's opinion. Environmentalists/Animal NGOs appeared in 52.8% of reports (n=168) and in 54.1% of the times their point of view that the bear should be let free was included. In this they agreed 100%. As for the rest of stakeholders their thoughts were almost nonexistent. For example, scientists were named in 33.3% of the newspapers but in 96% their opinion was unknown. Farmers were present in 24.5% of the reports but in 66% of the cases we don't know which their judgment was while hunters only had a 10.4% of representation. Residents turned up at 11.3% (n=36) but most didn't mention their preference, thus we can't say anything about agreement. Recreationists were named 13.8% (n=44) and ambassadors got a very poor presence with 5% (n=16). The most popular and named representative in this category was Brigitte Bardot, ex-french actress who proposed her foundation's bear sanctuary in Bulgaria as an alternative for Papillon. For the "other" category, media such as RaiNews were the most present.

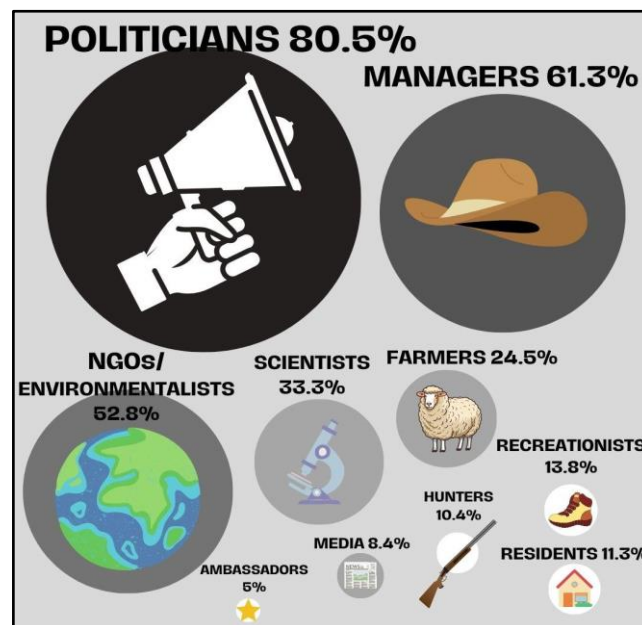


FIG.9. Stakeholder representation in the media. For the percentage, each stakeholder appearance was calculated independently in relation to the total of reports collected.

5. DISCUSSION

Report collection analysis leaves no doubt that M49/Papillon became a figure of freedom or at least, of resistance which qualifies to recognize him as a flagship individual (Jarić et al, 2023). This bear fulfills the requirements to be considered as such, given that he combines traits associated with his own species charisma, sui generis individual traits, exposed himself notoriously and his life story is internationally known (Jarić et al, 2023). Regardless of what he destroyed or the management problems he brought to surface, the fact that this animal was able to escape bars and return to nature twice, rocketed his reputation beyond many other animals only known for their negative or hopeless stories, becoming a unique individual (Zibordi, 2023). M49 was the headline subject of some major international newspapers such as “The New York Times” or “The Guardian” and might have even reached more countries but this research was limited to using only three languages. As well, he managed to awaken the most spiritual aspect of the human-bear conflict so far. It is also worth mentioning that M49/Papillon didn't only appear in media reports, he also inspired songs, podcasts, films, hashtags, social media posts, not to mention legal accusations, hunger strikes and intense public demonstrations (Zibordi, 2023). Many interesting terms to refer to M49 collected from the reports, as well as different things he inspired are listed in the Annexes below.

It is quite logical that most of the articles come from both national and local sources because relevant political figures were actively involved in the plantigrade's fate decision: Trentino's governor Maurizio Fugatti and Environment Minister Sergio Costa. As well, the battle between governor Fugatti and animalist ONGs was effervescent.

Regarding the reports' content, just 5.6% contained some kind of sensationalism. On one hand, considering the relevance of human-bear conflict nowadays, it was surprising that sensationalism wasn't more significant. But maybe the reason is that it wasn't really needed, as conflict between stakeholders was enough to catch all the reader's eyes. Furthermore, we could consider low negative sensationalism a positive outcome of the research, as it wouldn't contribute to conservation efforts.

Pro-conservation content was present in 20.4 % of the articles. This amount of articles including this type of information seems poor considering today most bibliography agrees on the superlative need for communicating about conservation aspects (Barua, 2010; Sunderland, 2009; Swenson et al, 2020; Treves and Karanth, 2003). For example,

none is said about human-wildlife conflicts or how these problems have been addressed in other countries. Little information about brown bear biology is included, which could be useful for the public to understand some aspects like bear behavior and the fact that brown bears (*Ursus arctos*) are known to have personalities (Bombieri et al, 2021) (Fagen and Fagen,1996) (Linnell, 1999). None is told about positive stories on coexistence and successful conservation initiatives. M49's popularity could have been useful to bring out this kind of information.

Regarding the decisions behind management choices, these were almost absent. The only reference to this was which PACOBACE plan criteria M49 had violated or the fact that the bear was considered dangerous by authorities because he had been able to break the enclosure bars. But even though PACOBACE suggests an individual approach to "nuisance" bears, reports don't include further information about management strategies. This may suggest an individual-centered perspective instead of a pro-population speech which could help the public understand that removing problematic individuals from the wild is done to protect the species integrity. This lack of content could be considered a lost opportunity for conservationists to explain to the general public further aspects from an integral ecosystem view.

Moreover, lack of communication about conservation strategies gives place to spark misinformation and suspicion towards institutions and science (Nanni, 2023). Considering all the communication tools available nowadays, conservationists should take advantage of them to amplify their messages and to work together with journalists to reach a broader audience and the latter to write scientifically sound articles as acceptance (Barua, 2010). This is crucial for evolving strategies in conservation.

Regarding the appellative "Papillon", the majority of reports used it 84.3%. We could explain this because the term Papillon is much friendlier than "M49" which recalls a UK 'motorway name, a country code or a Yugoslavian rifle model.

Moving on to the stakeholders representation, it is more than evident their presence in the news wasn't balanced. We could say their appearance could be classified as active or passive. To begin with, politicians were the main protagonist -active- stakeholder. The battle for M49's destiny was an intense contest not only between authorities and animalists but inside their own category as well which is shown by the lack of agreement. This was basically the result of confrontation between the Minister for the Environment,

Sergio Costa and the President of the Province of Trento, Maurizio Fugatti, who expressed opposite opinions about M49 management actions. Managers, mostly represented by rangers, occupy the second place but theirs was a passive presence and their appearance on the articles might be explained by the fact that rangers are the most immediate figure to be consulted by the general public when events with local fauna or flora happen. The third place on the “podium” belongs to ONGs/Animalists/Environmentalists who were the main contestants against politicians, intensifying the debate. This was quite expected because we can’t help but to think of how strong the animalists’ reaction was towards president Fugatti’s resolutions. As expected, they agreed on releasing captive bears. Instead, recreationists, hunters, farmers and residents, as well as scientists received little space in the media, less than 50% each. This supports the idea of how oriented are the expression possibilities mediatically.

Scientists’ smaller participation mirrors what was mentioned before, about the missed opportunities to develop the human-wildlife conflict to the public and talk about conservation strategies. This omission contributes to what is mentioned in diverse articles and journals. If we want to engage in bear acceptance, scientists need to improve their presence -qualitatively and quantitatively- in the media (Barua, 2010; Treves and Karanth, 2003). Because for journalists it is probably easier to sell chaotic headlines which promote polarization among other stakeholders, scientists need to work double on lighting up their appearance. There is no use in tons of isolated scientific papers in the academic world if their key contents can’t reach the general public. Also it is part of the scientists’ duty to make science reach non-scientists and shorten the “research-implementation gap” or “information gap” (Sunderland et al., 2009).

Another stakeholder that could be useful to reach the general public and collaborate with spreading consistent messages could be ambassadors. However in this research only one figure made a remarkable intervention that gave place to some headlines, and it was Brigitte Bardot. Unfortunately, her intervention just fueled the controversy among animalists and governor Fugatti.

Finally, even if we didn’t include it as a main stakeholder in our research initially, mass media appeared as the “other” stakeholder which was more frequently mentioned. This reinforces the idea of the crucial role it has to play (Nanni et al., 2022). Unfortunately, problematic individuals will continue to appear and negative events are likely to happen. So, that could be the occasion for the mass media journalists to give more complete,

transparent, and balanced information and increase public tolerance by motivating management choices with ecological perspective explanations (IUCN, 2023).

Some recommendations could be provided to conservationists in order to be successful in communication based on what other authors like Zimmermann (Zimmermann, 2020) or Slagle (Slagle, 2013) mention. Being more present and active in social media (Nanni, 2023; Nanni, 2020) as well as traditional media as well as using visual communication can be first steps. Maintaining regular communication during low conflict periods and supplying journalists with interesting contents can also add to the coexistence cause. Locally, conservationists should invest time and money in building trustable and long-term relationships with stakeholders (Nanni 2023). An interdisciplinary approach is supported by different authors (Barua, 2010; Treves and Karanth, 2003). Plus, engaging deeper with other social sciences could be helpful (Sunderland et al., 2009). Blending human, social and economic issues in the delivery of conservation biology as well as improving the sharing of information could bring a positive impact on biodiversity protection (Sunderland et al., 2009).

5.1 Future perspectives

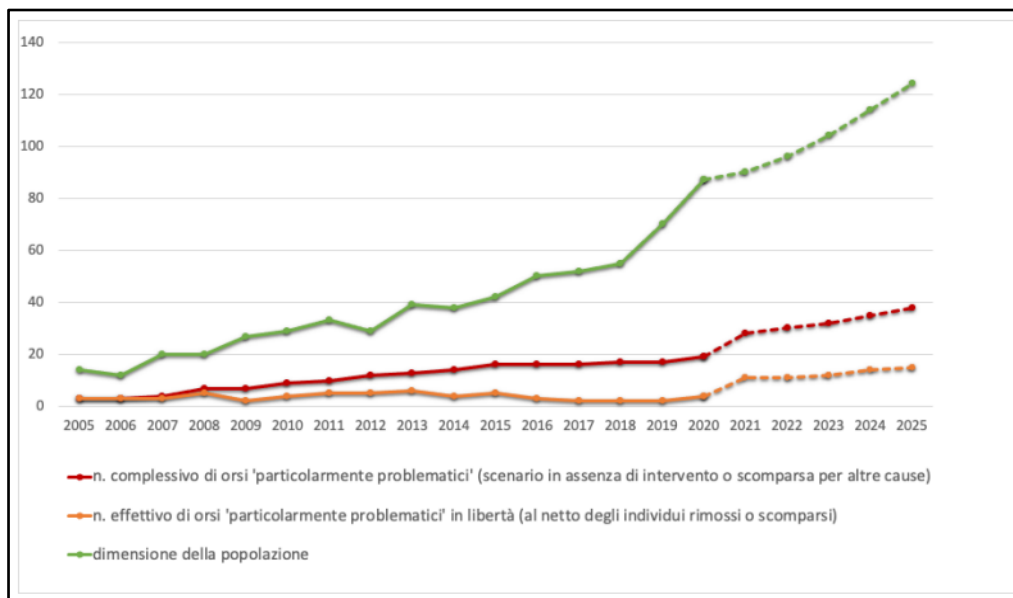


FIG.10. This graphic obtained from Ispra-MUSE 2021 report, based on a “deterministic” demographic model basically shows that problematic bear numbers are expected to grow independently of removal interventions in a 5-year projection.

We could define carnivore management at a crossroads situation nowadays (Treves and Karanth, 2003). Considering the number of problematic bears is expected to increment and human population shows no sign of decreasing, human-bear interactions will become even more frequent, even if large carnivores have adopted human avoidance behaviors (Bombieri et al 2021) and may try to persist in some remote and uninhabited wilderness areas (Chapron et al, 2014). For a brown bear conservation strategy to be successful, stakeholders and inhabitants must be committed to making it work (Swenson et al, 2020).

Tolerance and education based on scientific data are two key aspects to increase wildlife value (Knopff, 2016) so that solutions are not guided by fears and prejudices against carnivores (Treves and Karanth, 2003). Consequently, conservation biologists need to engage better in informing the rest of stakeholders about feasible options based on careful research (Barua, 2010; Nanni 2020; Treves and Karanth, 2003).

Taking into consideration each bear has a different personality just like their context and the conflict they may be involved in, management decisions could be tailor made (Treves and Karanth, 2003) while involving representatives of each stakeholder group.

Lastly, acknowledging how tolerance is linked to empathy, animal welfare and ethical aspects of conservation and how important they are, future research could investigate how these topics could be featured in brown bear management so as to incorporate a more philosophical perspective.

6. CONCLUSION

Papillon achieved outstanding popularity among other flagship individuals, becoming a symbol of struggle for freedom.

Research results comply with the consulted bibliography at a regional and international level. Lack of crucial information regarding conservation aspects is closely linked to poor representation of scientists and their opinion in the media.

Solving human-wildlife conflicts is a complex task which requires collaboration from all stakeholders concerned and desiring that the compromised species -in this case brown bears- continue being part of the ecosystem they belong to. In order to involve all the aspects of the issue we need an interdisciplinary approach and a strong commitment from the scientific side to work with the media and provide a wider ecological perspective.

7. ANNEXES

7.1 M49/ Papillon 's Story.

Born in 2016, M49 is a male bear whose name comes from “M” (male) and “49” (its ID number). Conflict with this individual started mainly during 2018- 2019, when he started visiting some mountain huts and preying on cattle. Because he became a threat to farmers’ resources, it was decided he had to be captured. In July 2019 it was caught and taken to an enclosure inside Casteller center, from which he managed to escape hours later and without radiocollar. The rest of the year he was the protagonist of other damages until he started hibernation by November. Months later he was seen in different locations, and still not changing his problematic behavior. By April 2020 rangers managed to capture M49 for the second time and took him to Casteller, where the enclosure barriers had been repaired and reinforced. However, M49 released himself once more in July. On this occasion he still had the radio collar on, which facilitated following his path –at least until it fell down because the bear lost weight-. Finally, in September 2020 the freedom chapter of the “Houdini” bear concluded, as he was captured for the third time and taken to Casteller, where security measures had been strengthened even more. This bear managed to catch media attention internationally and became the subject of numerous headlines.

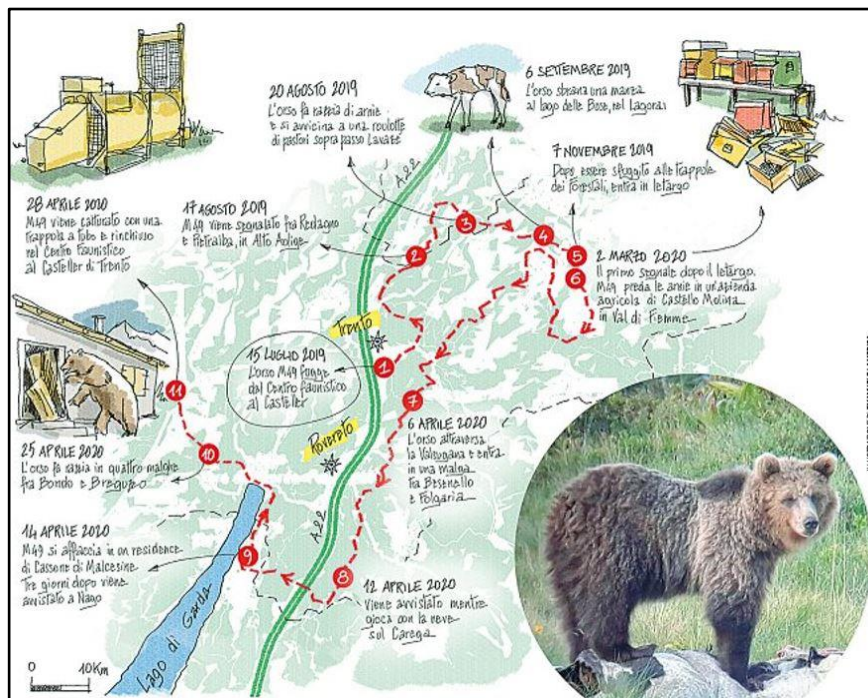


FIG.11. “La cronistoria dell’orso M49” Drawing by Emanuele Lamedica published in Next Quotidiano.

7.2 Sensationalistic words list.

We consider as sensationalistic texts those that included words such as:

IT: “sbranare”, “squartare”, “divorare”, “disastro”, “strage”, “massacro”, “carneficina”, “cruento”, “allarme”, “panico”, “situazione fuori controllo”, “bagno di sangue”, “spargimento di sangue”, “sanguinolento”, “sanguinario”, “assetato di sangue”, “spaventoso”, “raccapricciante”, “inquietante”, “terribile”, “terrificante”, “terrore”, “terrorizza”, “mostruoso”, “incubo”, “horror”, “orrore”, “orribile”, “orrendo”, “malvagio”, “sinistro”, “malefico”, “diavolo”, “diabolico”, “inferno”, “feroce”, “killer”, “assassino”.

SP: “desgarrar”, “descuartizar”, “devorar”, “desastre”, “masacrar”, “carnicería”, “cruento”, “espantoso”, “alarma”, “pánico”, “situación fuera de control”, “baño de sangre”, “derramamiento de sangre”, “sangriento”, “sanguinario”, “sediento de sangre”, “aterrador”, “atemorizador”, “perturbador”, “horripilante”, “inquietante”, “terrible”, “terrificante”, “terror”, “aterrorizante”, “monstruoso”, “pesadilla”, “horror”, “horrible”, “horrendo”, “horroroso”, “malvado”, “siniestro”, “demonio”, “diabólico”, “demoniaco”, “infierno”, “mal”, “satánico”, “espeluznante”, “pesadilla”, “feroz”, “asesino”, “come-hombre”, “estragos”

EN: “tear apart”, “quarter”, “devour”, “disaster”, “massacre”, “carnage”, “murderous”, “bloody”, “alarm”, “panic”, “situation out of control”, “bloodbath”, “bloodshed”, “bloody”, “bloodthirsty”, “sanguinary”, “scary”, “creepy”, “disturbing”, “terrible”, “terrifying”, “terror”, “terrify”, “awful”, “dreadful”, “appalling”, “dire”, “fearful”, “monstrous”, “nightmare”, “horror”, “horrific”, “horrid”, “evil”, “sinister”, “devil”, “diabolical”, “hell”, “ferocious”, “killer”, “mortal”, “satanic”, “murderer”, “assassin”, “slayer”, “nightmare”, “man-eating”, “badly”, “gruesome”, and “jaws”.

7.3 What Papillon has inspired...

Accuse legali /Legal acuses
Battaglie tra membri di governo (strategia politica)/ Political battles
Canzoni/ Songs
Hashtags nei social/ Social hashtags
Scioperi di fame/ hunger strikes
Manifestazioni/ manifestations
Memes e battute / memes and jokes
Petizioni, raccolta di firme/ petitions, signature collection
Podcasts e programmi di radio/ Podcasts and radio programs

7.4 Expressions used to refer to M49/Papillon.

POSITIVE (+)	NEGATIVE (-)	NEUTRAL
“Insegna quanto la libertà di pensiero sia al di sopra di tutto” / “It teaches how freedom of thought is above everything.”	“Orso pericoloso”/ “Dangerous bear”	“L’orso più famoso d’Italia”/ “The most famous bear in Italy.”
“Un simbolo di libertà e natura.”/ “A symbol of freedom and nature”	“Orso confidente”/ “confident bear”	“L’orso più ricercato d’Italia”/ “The most wanted bear in Italy”
“Re delle fughe”/ “King of escape”	“Simbolo del fallimento di	“Plantigrado più

	politiche vecchie e punitive”/ “Symbol of the failure of old and punitive policies”	ricercato d'Europa”/ “Most wanted plantigrade in Europe”
“Ultimo libertario”/ “Last libertarian”	“Prigioniero politico”/ “Political prisoner”	
“Emblema”/ “Emblem”	“Problema”/ “Problem”	
“Valore aggiunto per il nostro territorio”/ “Added value to our territory”	“Oso con sostancioso historial criminal”/ “Bear with substancial criminal history”	
“Simboleggia un’indole forte e decisa”/	“Symbolic of the conflict over the reintroduction of large predators”	
“Nuovo eroe del libertarismo italico”	“Individuals considered dangerous, or simply an excessive burden on the local economy.”	
“Iconic”/ “Iconico”		
“Leggenda” / “Legend”		
“Champion of the force of nature over humans”		
“Emblema della wilderness assoluta”/ “Emblem of the absolute wilderness”		
“Mitologico maestro della fuga”/ “Mythological master of escape”		

7.5 Relevant citations from the reports collected

<p>"Uccidere un animale urta molto la sensibilità di chi è attaccato alla vita del singolo, ma a volte è opportuno per fare il bene della popolazione degli orsi e dello stesso progetto di ripopolamento". "Killing an animal greatly offends the sensitivity of those who are attached to the life of the individual, but sometimes it is appropriate to do the good of the bear population and of the repopulation project itself".</p>
<p>"La única manera para curar esta fractura es alfabetizar al ciudadano metropolitano en las cuestiones de la naturaleza" "The only way to heal this fracture is to educate citizens in matters of nature."</p>
<p>"Who are these plantigrades? What do they represent to the women and men who fight in their name and tear down their cages?"</p>
<p>"The government must be able to safeguard the personal and economic security of local communities while, at the same time, defending the rights of these iconic animals to roam their historic territory. It's a very tricky balance."</p>
<p>"Papillon non è solo un valore aggiunto per il nostro territorio, ma per le riflessioni che instilla nelle nostro menti" "Papillon is not only an added value for our territory, but for the reflections it instills in our minds".</p>
<p>"M49 è un problema". E lo è perché ha superato quel sottile confine tra le regole della natura e le regole sociali." "M49 is a problem. And it is because it has overcome that thin boundary between the rules of nature and social rules".</p>

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