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1                   **On the overlap between scientific and societal taxonomic attentions - insights for conservation**

2  
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31 **Abstract**

32 Attention directed at different species by society and science is particularly relevant within the field of conservation, as  
33 societal preferences will strongly impact support for conservation initiatives and their success. Here, we assess the  
34 association between societal and research interests in four charismatic and threatened species groups, derived from a  
35 range of different online sources and social media platforms as well as scientific publications. We found a high level of  
36 concordance between scientific and societal taxonomic attention, which was consistent among assessed species groups  
37 and media sources. Results indicate that research is apparently not as disconnected from the interests of society as it is  
38 often reproached, and that societal support for current research objectives should be adequate. While the high degree of  
39 similarity between scientific and societal interest is both striking and satisfying, the dissimilarities are also interesting,  
40 as new scientific findings may constitute a constant source of novel interest for the society. In that respect, additional  
41 efforts will be necessary to draw scientific and societal focus towards less charismatic species that are in urgent need of  
42 research and conservation attention.

43

44 **Keywords:** societal attention; charisma; birds of prey; Primates; Carnivora; marine mammals

45

46 **1. Introduction**

47 Species receive uneven attention in terms of scientific research (Clark and May, 2002; Proenca et al.,  
48 2008; De Lima et al., 2011; Murray et al., 2015; Donaldson et al., 2016; Fleming and Bateman, 2016). This uneven  
49 scientific focus is driven by diverse factors, such as geographic location, species accessibility, suitability for use as  
50 model species, conservation status, and researchers' own personal interests (Jarić et al., 2015). Society, however, can  
51 also influence research focus through policy and funding agendas, while science in turn influences societal attention  
52 through scientific communication and media representation. Contrastingly, choices of studied species are sometimes  
53 criticized as leading to a waste of societal resources when they do not appear to match the immediate interest of  
54 taxpayers.

55 Based on the main drivers of societal and scientific taxonomic attention identified so far in the literature,  
56 we suggest that there are at least three general categories of drivers of societal and scientific taxonomic attention: 1)  
57 intrinsic, species-related factors, which can also be considered as elements of species charisma, 2) population-level or  
58 spatial factors, and 3) socio-economic factors. Major intrinsic factors include body size, unique morphology, distinctive  
59 coloration patterns, anthropomorphism, behavior, social structure and neotenic features (Moustakas and Karakassis,  
60 2005; Stokes, 2007; Wilson et al., 2007; Martín-Fóres et al., 2013; Žmihorski et al., 2013; Kim et al., 2014). Other

61 recognized proxies for scientific and societal taxonomic preferences are phylogenetic distance from humans and  
62 structural complexity (Proenca et al., 2008; Martín-López et al., 2011; Martín-Fóres et al., 2013), although both are  
63 associated with already listed factors such as anthropomorphism and body size. Population-level or spatial factors  
64 include abundance, range size, range proximity to or overlap with developed nations, extinction risk, and habitat  
65 accessibility (Wilson et al., 2007; Brooks et al., 2008; Sitas et al., 2009; Trimble and van Aarde, 2010; Fisher et al.,  
66 2011; Žmihorski et al., 2013; Dos Santos et al., 2015; Jarić et al., 2015; Zhang et al., 2015). Socio-economic factors are  
67 represented by the species economic value (e.g. as an object of trade or tourism), its pest status, potential threat to  
68 humans (e.g. venomous or aggressive species), presence of key ecological values or ecosystem services, and various  
69 cultural values (i.e. traditional, religious, etc.) (Moustakas and Karakassis, 2005; Wilson et al., 2007; Proenca et al.,  
70 2008; Jarić et al., 2015; Zhang et al., 2015; Donaldson et al., 2016; Roll et al., 2016).

71           While previous research has addressed the factors underlying uneven taxonomic attention, the actual  
72 level of overlap between societal and scientific attention has been poorly quantified. In the current information age,  
73 society has access to and produces much more content than any previous generation. Due to the sheer amount of  
74 accessible information, it becomes necessary to make choices regarding the attention scope. Consequently, it may be  
75 interesting to compare the species chosen by scientists and by the rest of the society. This question was previously  
76 addressed in the seminal work of Wilson et al. (2007), however this was based on a rather limited sample. While it has  
77 not received further attention so far, this issue remains highly relevant, particularly within the field of conservation  
78 biology. As stated by Stokes (2007), societal preferences are just as important for the success of conservation efforts and  
79 survival of many endangered species as are common ecological determinants, such as minimum population size and  
80 habitat requirements. Societal preferences can play a wide range of roles. People express their views and interests using  
81 various widespread media, and not all have the opportunity to express their interest in a more active way, such as  
82 engagement in conservation non-profit organizations. Societal attention towards particular species can be beneficial if it  
83 helps society to understand the need for conservation action and to support it. Approaches that aim to attract societal  
84 attention towards conservation goals, such as flagship species concept, have proven to be successful in attracting  
85 societal support and funding (Veríssimo et al., 2011, 2017). On the other hand, increased attention might sometimes lead  
86 people to exert increasing negative pressure on the species they are interested in, akin to the Anthropogenic Allee Effect  
87 (Courchamp et al., 2006), or alternatively to contest actions against invasive alien species (Courchamp et al., 2017).

88           Here we take advantage of emerging culturomic techniques (Michel et al., 2011; Ladle et al., 2016;  
89 Sutherland et al., 2018) to assess the similarities and differences in the societal and scientific interests in different  
90 species, based on scientific publications and a range of different online sources and social media. We assessed the

91 relationship between the scientific and societal taxonomic attention within four species groups that predominantly  
92 consist of charismatic and threatened animals: carnivorans, primates, marine mammals and birds of prey. We discuss the  
93 drivers of observed relationships and overlaps, and address their implications for conservation planning and  
94 management.

95

## 96 **2. Methods**

97 Data retrieval was based on the approach proposed by Jarić et al. (2016) and Correia et al. (2017).  
98 Species lists, comprising diurnal birds of prey (orders Accipitriformes, Falconiformes and Cathartiformes), Carnivora,  
99 Primates and marine mammals (cetaceans and pinnipeds), were obtained from the IUCN Red List database (IUCN,  
100 2017). Extinct species and those described after 1995 were excluded from the analysis, which resulted in a total of 1058  
101 species in the dataset (318 birds of prey, 252 carnivorans, 370 primates and 118 marine mammals). Search of scientific  
102 publications and online media sources was conducted by using both species scientific names and scientific synonyms,  
103 each placed in parentheses, within a same search query (i.e., [*“species name”* OR *“synonym #1”* OR *“synonym #2”*  
104 OR...]). This resolved the problem of potential double entries, and the results were thus expressed as the number of  
105 unique records per species. Scientific names represent a reliable proxy and preferable alternative to vernacular names,  
106 due to a strong and culturally independent association between their representation in digital corpora (Jarić et al., 2016;  
107 Correia et al., 2017, 2018). At the same time, search based on scientific names avoids numerous problems related to  
108 vernacular language, such as frequent vernacular synonyms and homonyms (Roll et al., 2018), differing names among  
109 languages, as well as lack of vernacular names for some species (Jarić et al., 2016). Accounting for taxonomic  
110 synonyms is also critical, as they can strongly affect the accuracy of species data retrieval (Correia et al., 2018).

111 Research attention was defined as the number of scientific articles indexed within the Web of Knowledge  
112 (available at [www.isiknowledge.com](http://www.isiknowledge.com)) for a given species. The search was conducted within titles, abstracts, and  
113 keywords of referenced publications published during 1996-2016. Keywords that are automatically assigned by the Web  
114 of Knowledge (i.e. Keywords Plus) were not considered in the analysis, due to their low reliability (Wilson et al., 2007;  
115 Fisher et al., 2011).

116 Media coverage for each species was estimated based on the following five online sources: Internet pages  
117 containing the species name, online articles in selected major international newspapers (The New York Times, The  
118 Guardian, Le Monde, Washington Post, and Asahi Shimbun), Twitter, Facebook, and pictures posted on the Internet for  
119 each of the studied species (Jarić et al., 2016). Media coverage data collection was performed in line with the approach  
120 by Correia et al. (2017), by using the Google’s Custom Search Engine API. Searches were carried out during June 2017,

121 with search queries for each of the online sources based on Jarić et al. (2016): 1) Internet pages – [“*species name*”], 2)  
122 Twitter – [“*species name*” site:twitter.com], 3) Facebook – [“*species name*” site:facebook.com], 4) Newspapers –  
123 [“*species name*” (site:nytimes.com OR site:theguardian.com OR site:lemonde.fr OR site:washingtonpost.com OR  
124 site:asahi.com)], and 5) Photographs – [“*species name*” (filetype:png OR filetype:jpg OR filetype:jpeg OR filetype:bmp  
125 OR filetype:gif OR filetype:tif OR filetype:tiff)].

126           The resulting dataset features the number of records per species and per assessed sources. Since the  
127 variables were not normally distributed (Kolmogorov-Smirnov test,  $p < 0.001$ ), nonparametric tests were applied.  
128 Relationship between the number of scientific publications and the five online media sources, within each of the four  
129 studied species groups, was assessed using a Spearman’s Rank test, with Bonferroni correction. We also conducted  
130 ranking, by ordering species based on the number of results for each of the five online media sources assessed and  
131 estimating the average rank across the sources; ranking was also performed for scientific publications.

132

### 133 **3. Results**

134           The average number and range of records obtained for each species group, for scientific publications and  
135 each of the five assessed online media sources, are presented in Table S1 (Supplementary material). Results indicated  
136 strong correlations (0.751 mean correlation coefficient,  $p < 0.001$ ) between the number of scientific publications per  
137 species and the number of results from each of the online media sources assessed, in each of the four studied species  
138 groups (Fig. 1; Table 1). Correlations were strongest in carnivorans and lowest in primates (0.836 and 0.696 mean  
139 correlation coefficients, respectively). Regarding the media sources assessed, correlations with the number of scientific  
140 articles per species were strongest for Internet pages and lowest for newspaper articles (0.889 and 0.550 mean  
141 correlation coefficients, respectively; Table 1). All correlations remained significant following a Bonferroni correction.  
142 Proportion of online media coverage and scientific articles per each studied species group (Fig. 2) indicated differences  
143 in the overall relative coverage among media sources and species groups. Birds of prey were consistently more  
144 represented than other species groups. The proportional representation of species in relation to scientific articles was  
145 higher in internet webpages, Facebook posts and photographs, but lower in Twitter and online news.

146           Overall species ranks within social media had strong positive correlations with their ranking based on  
147 scientific publications (Table 1). Lists of top-ranked species based on their overall presence in social media were fairly  
148 similar to those that reached top ranks within scientific publications (Table 2). Common bottlenose dolphin (*Tursiops*  
149 *truncatus*) was the most popular marine mammal species within the scientific community, and the second-highest  
150 ranking marine mammal species for the general society. Top-ranked birds of prey in science and among the general

151 society, as well as top-ranked carnivorans in science, are exclusively represented by European and North American  
152 species. On the other hand, top-ranked carnivorans among the general society also comprised two big cats from Africa  
153 and Asia, lion (*Panthera leo*) and tiger (*P. tigris*). Top-ranked primates were dominated by macaque species (*Macaca*  
154 *sp.*) such as rhesus macaque (*Macaca mulatta*), the highest ranked primate within both sources, as well as by big apes  
155 (Table 2).

156

#### 157 **4. Discussion**

158           The literature indicates that species coverage may differ among different media (Jacobson et al., 2012).  
159 However, in our study all five assessed online media sources provided similar results, which suggests that they can  
160 potentially be used interchangeably as a measure of societal taxonomic attention. Yet, most of them either represent  
161 specific sectors, such as newspaper articles, or are generated by different processes, and therefore may provide  
162 essentially different information. Although they have been relatively rarely used so far, web-based images also seem to  
163 represent a suitable tool for data mining (Barve, 2014; Jarić et al., 2016; Ladle et al., 2017; Sherren et al., 2017a,  
164 2017b). Images and other visual media may be especially adequate for culturomic studies that are focused on species  
165 attractiveness and charisma, which is particularly relevant for the field of conservation biology. As our study  
166 demonstrates, the use of images within this field can go beyond the analysis of cultural ecosystem services (Willems et  
167 al., 2015; Martínez Pastur et al., 2016; Hausmann et al., 2017). Use of social media in conservation science is still  
168 somewhat limited (Di Minin et al., 2015), but is rapidly increasing. Twitter and Facebook represent dominant social  
169 media platforms, which makes them suitable research tools (Miller, 2011; Roberge, 2014; Papworth et al., 2015). They  
170 are rapidly changing communication and information sharing dynamics, and are increasingly used as communication  
171 platforms by the scientific community and other groups from the biodiversity conservation field (Naaman et al., 2011;  
172 Bombaci et al., 2015). Online news media have a wider reach than traditional printed newspapers, and are considered  
173 suitable to reflect societal attention and popular attitudes (Verissimo et al., 2014; Papworth et al., 2015). However, we  
174 observed very low presence of species in newspaper articles (Table S1). As much as 68% of the assessed species had no  
175 newspaper articles, while only 20% of the species had more than a single result. This issue may be partly due to the  
176 search conducted by using only scientific species names, although such approach has been validated (Jarić et al., 2016)  
177 and does not seem to be an issue with the other online sources, such as web-based images. To a certain extent, this may  
178 be due to news media commonly focusing on only a small proportion of high-profile species (i.e., charismatic species,  
179 or those with high economic value), while the majority of other species seem to end up being neglected. Additionally,  
180 low species coverage by online news media may stem from inappropriate publishing practices. Wildlife observers or

181 photographers often strive to provide the scientific name of the species they are posting about on the web, while  
182 journalists do not. Due to potential implications for science education and societal outreach, it would be valuable to  
183 explore this issue further.

184           Based on all these various representations of societal attention, our analysis unveiled a high level of  
185 concordance between scientific and societal taxonomic attention, and this was consistent among assessed species groups  
186 and online media sources. This shows that scientific focus is not remote from societal attention towards different  
187 species, and *vice versa*, a finding also reported by Wilson et al. (2007). On the one hand, this can be interpreted as a  
188 positive outcome, since scientists are apparently well aligned with societal attention, which is what the general society,  
189 as providers of public funding, and consequently the funding agencies, would request. On the other hand, if research  
190 focus and societal attention are both considered to be biased (Clark and May, 2002; Sitas et al., 2009; Kim et al., 2014;  
191 Roberge, 2014; Donaldson et al., 2016; Wilson et al., 2016; Troudet et al., 2017), it is of special importance to  
192 understand the mechanisms that produce such biases. They are likely represented by a similar set of drivers that are  
193 influencing societal and scientific attention, as well as by the interaction between the two groups. However, as stated by  
194 Troudet et al. (2017), while the presence of interaction between the scientists and the general society is not  
195 questionable, it remains particularly challenging to clarify the actual direction and causality of influence between the  
196 two groups. It is important to emphasize that our study focused only on the level of overlap among the coverage of  
197 different media sources and scientific publications, and not on the actual media content or mechanisms that are driving  
198 public and scientific attention.

199           The top five ranked species in each of the four studied species groups revealed a substantial overlap between  
200 scientific and societal focus (Table 2). Popularity of common bottlenose dolphin within the scientific community is  
201 mainly due to its use as a model species in experiments on a wide range of topics, such as echolocation, behaviour,  
202 intelligence, swimming and communication (Jarić et al., 2015). At the same time, its popularity for the general society  
203 probably comes from its ubiquity and high presence in both captivity and popular culture. Dominance of European and  
204 North American birds of prey and carnivores points to commonness and range overlap with developed countries as  
205 major drivers of taxonomic attention. Lion and tiger, African and Asian carnivores that were among the top-ranked  
206 species by the general society, were previously identified as the two most charismatic animals globally, while the gray  
207 wolf (*Canis lupus*), highest-ranked carnivoran within both sources in the present study, was identified in the same study  
208 as the 9<sup>th</sup> most charismatic animal (Courchamp et al., 2018). Among the primates, those that are prominently used as  
209 model species dominated the ranking. Based on the individual checking of internet sources and online news for the  
210 rhesus macaque, it seems that its high presence in online media is mainly due to health- and medicine-related content,



211 where the species is mentioned as a study system (e.g. efforts at developing HIV vaccine). Big apes are among the most  
212 charismatic primate species (Courchamp et al., 2018), mainly due to higher levels of anthropomorphism and  
213 comparatively larger body size than in other primates. Use as model species is likely a less important attention driver  
214 for the society, which may explain why big apes are more prominent among the top-ranked primates for the general  
215 society than for science. This might have also contributed to the weaker correlations between the societal and scientific  
216 attention for primates than in the other three assessed species groups.

217           It is important to note the potential risk of a statistical bias when using a measure of societal interest that  
218 depends on the capacity of people to interact with the Internet. Users from developed countries and the related content  
219 are likely to be overrepresented, and those regions are also where most of the scientific output originates, which might  
220 make species from those areas also more prominent in both of the assessed sources (Martin et al., 2012; Amano and  
221 Sutherland, 2013; Amano et al., 2016; Wilson et al., 2016). This calls for caution when interpreting presented results.  
222 On the other hand, the potential problem of biased media coverage when focusing studies of online media on only a  
223 single language (Bhatia et al., 2013; Funk and Rusowsky, 2014) was resolved here by using scientific names as search  
224 keywords (Jaric et al., 2016; Correia et al., 2017).

225           Understanding of societal and scientific attention is especially relevant within the field of biodiversity  
226 conservation, due to its potential impact on the general support for conservation efforts (Stokes, 2007; Kiley et al.,  
227 2017; Liordos et al., 2017). The biodiversity conservation arena is generally considered to be represented by four  
228 distinct, interacting sectors: the scientific community, policy makers, news media, and the general society (Papworth et  
229 al., 2015). The extent to which the four sectors align in their focus depends on their sensitivity and susceptibility to each  
230 of the three general taxonomic attention drivers listed in the introduction (i.e., intrinsic, population-level/spatial, and  
231 socio-economic), as well as on the level of inter-sectoral interaction. The scientific community is strongly influenced by  
232 research funding and science policy. If both funding and the policy follow wider societal preferences, such as species  
233 charisma, scientific attention will correspond well to that of the general society. Scientists in turn also influence societal  
234 interests by communicating information and new knowledge to the general society, both directly, through different  
235 outreach activities, and indirectly, through news media and by informing and guiding policy development and  
236 conservation decision making (Moustakas and Karakassis, 2005; Trimble and van Aarde, 2010; Papworth et al., 2015).  
237 Certain levels of dissimilarity between scientific and societal attention can also produce positive effects, by bringing  
238 new centers of interest to the general society. Each of the sectors is also subject to its own internal mechanisms that  
239 generate or maintain existing taxonomic attention patterns. For example, research inertia may contribute to perpetuated  
240 biases in taxonomic attention in science (Jarić et al., 2015; Troudet et al., 2017). Researchers often focus on well-

241 studied species they are familiar with, with proven potential to attract funding, and past research in one area will  
242 therefore have a tendency to generate more research in the same area (Martín-López et al., 2009; Dos Santos et al.,  
243 2015; Correia et al., 2016a). This contradicts to an extent the general view of science as objective in its pursuit of new  
244 knowledge, especially if such focus towards charismatic species leaves numerous other, less appealing species largely  
245 neglected. Non-charismatic taxa and species groups, such as invertebrates, tend to receive poorer scientific and  
246 conservation attention and funding, even though they may be in greater need of research and management efforts  
247 (Muñoz, 2007; Cardoso et al., 2011; Fisher, 2011; Brambilla et al., 2013). Biased scientific publishing practices, such as  
248 "taxonomic chauvinism" (Bonnet et al., 2002), will also contribute to maintaining taxonomic biases in research.

249           The same drivers of taxonomic attention can impact both scientific community and the general society,  
250 while working within each of the two sectors through different mechanisms. For example, for many species, range  
251 proximity and population abundance seem to be two important drivers of societal attention, recognized as species  
252 commonness or familiarity (Žmihorski et al., 2013; Schuetz et al., 2015; Correia et al., 2016b). At the same time, they  
253 are also relevant drivers of scientific attention, by contributing to improved species accessibility, reduced logistical  
254 challenges and lower research costs (Dos Santos et al., 2015; Jarić et al., 2015). It is also important to bear in mind that  
255 scientists also represent members of the general society, with their own interests and susceptibility to drivers such as  
256 species charisma (Lawler et al., 2006; Lorimer, 2007; Wilson et al., 2007; Smith et al., 2009). It is therefore possible  
257 that, in cases where liberty of choosing research topic exists, societal and scientific interests will essentially be the  
258 same.

259           One implication arising from the results is that environmental education projects or programs should target  
260 species beyond the focus of the general society, to allow the discovery and promote interest in such species. At the same  
261 time, properly directed marketing campaigns can effectively increase funding availability towards less charismatic  
262 species (Verissimo et al., 2017). Another alternative would be to focus on the very species that both scientist and the  
263 general public are interested in, provide more knowledge on those species, and thus further strengthen societal support  
264 for current research efforts. One of the often-advocated measures in this respect is to intensify and improve the  
265 effectiveness of science communication (Dietz, 2013; Campos et al., 2018; Liordos et al., 2018). However, for science  
266 communication to accomplish the desired aims, a first step would be to consider mechanisms that shape societal  
267 attention, and to ensure that science outreach initiatives are structured based on identified societal beliefs, values,  
268 information gaps and misconceptions (de Bruin and Bostrom, 2013). Meanwhile, and despite its biases, the scientific  
269 community and conservationists should try to make the most of existing societal attention by taking advantage of  
270 flagship species to attract conservation funding and support for a wider range of species (Clark and May, 2002; Jepson

271 and Barua, 2015).

272

## 273 **5. Conclusion**

274           Societal interest in the fate of endangered species is a crucial prerequisite for effective conservation  
275 programs, given that the general society is likely to protect only what it recognizes as important (Stokes, 2007; Kim et  
276 al., 2014). Societal awareness and societal values will largely determine whether conservation initiatives will receive  
277 necessary support and lead to adequate policy change (Papworth et al., 2015). On one hand, societal attention is closely  
278 associated with scientific attention, which should ensure that the societal support for current research objectives should  
279 not be lacking. This also implies that scientists are not so disconnected from the rest of society. On the other hand,  
280 societal and scientific interests are not perfectly aligned, which indicates that there is room for studies of species not *a*  
281 *priori* interesting to the society. In fact, scientists may still remain free of the potential biases of societal taxonomic  
282 interests, while they are at the same time in good position to provide novel knowledge and new points of interest to the  
283 society.

284

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541 **Tables**

542

543 **Table 1.** Relationship between the scientific attention (Web of Science) and coverage within different media sources

544 (Internet pages, Twitter, Facebook, newspapers, and photographs posted on the internet) in different species groups

545 (Spearman's non-parametric correlation test,  $p < 0.001$ ; also see Fig. 1); see the text for information on overall ranking

546 approach.

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Correlation coefficients	Number of scientific publications			
	Carnivora	Primates	Marine mammals	Birds of prey
Posted pictures	0.893	0.817	0.850	0.837
Internet pages	0.906	0.897	0.894	0.860
Twitter	0.854	0.612	0.629	0.761
Facebook	0.842	0.685	0.700	0.782
Newspapers	0.685	0.470	0.545	0.498
Overall ranking	0.891	0.645	0.803	0.843

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567 **Table 2.** Top five ranked species from the four analyzed species groups, based on the frequency of their presence in  
568 scientific publications and the level of societal attention, estimated as the average ranking across five assessed online  
569 sources.  
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Species rank	<b>Carnivora</b>		<b>Primates</b>	
	Scientists	Society	Scientists	Society
1	Gray wolf ( <i>Canis</i>	Gray wolf ( <i>Canis</i>	Rhesus monkey	Rhesus monkey
2	<i>lupus)</i> Red fox ( <i>Vulpes</i>	<i>lupus)</i> Lion ( <i>Panthera leo</i> )	( <i>Macaca mulatta</i> ) Chimpanzee ( <i>Pan</i>	( <i>Macaca mulatta</i> ) Indri ( <i>Indri indri</i> )
3	<i>vulpes)</i> Brown bear ( <i>Ursus</i>	Wild cat ( <i>Felis</i>	<i>trogodytes)</i> Crab-eating macaque	Western gorilla
4	<i>arctos)</i> American mink	<i>silvestris)</i> Red fox ( <i>Vulpes</i>	( <i>Macaca fascicularis</i> ) Common marmoset	( <i>Gorilla gorilla</i> ) Celebes crested
5	( <i>Neovison vison</i> ) Coyote ( <i>Canis latrans</i> )	<i>vulpes)</i> Tiger ( <i>Panthera tigris</i> )	( <i>Callithrix jacchus</i> ) Southern pig-tailed macaque ( <i>Macaca</i>	<i>nigra)</i> Bonobo ( <i>Pan paniscus</i> )
			<i>nemestrina)</i>	
	<b>Marine mammals</b>		<b>Birds of prey</b>	
	Scientists	Society	Scientists	Society
1	Common bottlenose dolphin ( <i>Tursiops</i>	Killer whale ( <i>Orcinus</i> <i>orca</i> )	Peregrine falcon ( <i>Falco peregrinus</i> )	Peregrine falcon ( <i>Falco</i> <i>peregrinus</i> )
2	<i>truncatus)</i> Harbor seal ( <i>Phoca</i> <i>vitulina</i> )	Common bottlenose dolphin ( <i>Tursiops</i>	Bald eagle ( <i>Haliaeetus</i> <i>leucocephalus</i> )	Golden eagle ( <i>Aquila</i> <i>chrysaetos</i> )
3	Harbour porpoise ( <i>Phocoena phocoena</i> )	<i>truncatus)</i> Blue whale ( <i>Balaenoptera</i>	Northern goshawk ( <i>Accipiter gentilis</i> )	Eurasian buzzard ( <i>Buteo buteo</i> )
4	Humpback whale ( <i>Megaptera</i>	<i>musculus)</i> Humpback whale ( <i>Megaptera</i>	Golden eagle ( <i>Aquila</i> <i>chrysaetos</i> )	Bald eagle ( <i>Haliaeetus</i> <i>leucocephalus</i> )
5	<i>novaeangliae)</i> Killer whale ( <i>Orcinus</i> <i>orca</i> )	<i>novaeangliae)</i> Sperm whale ( <i>Physeter</i> <i>macrocephalus</i> )	American kestrel ( <i>Falco sparverius</i> )	Griffon vulture ( <i>Gyps</i> <i>fulvus</i> )

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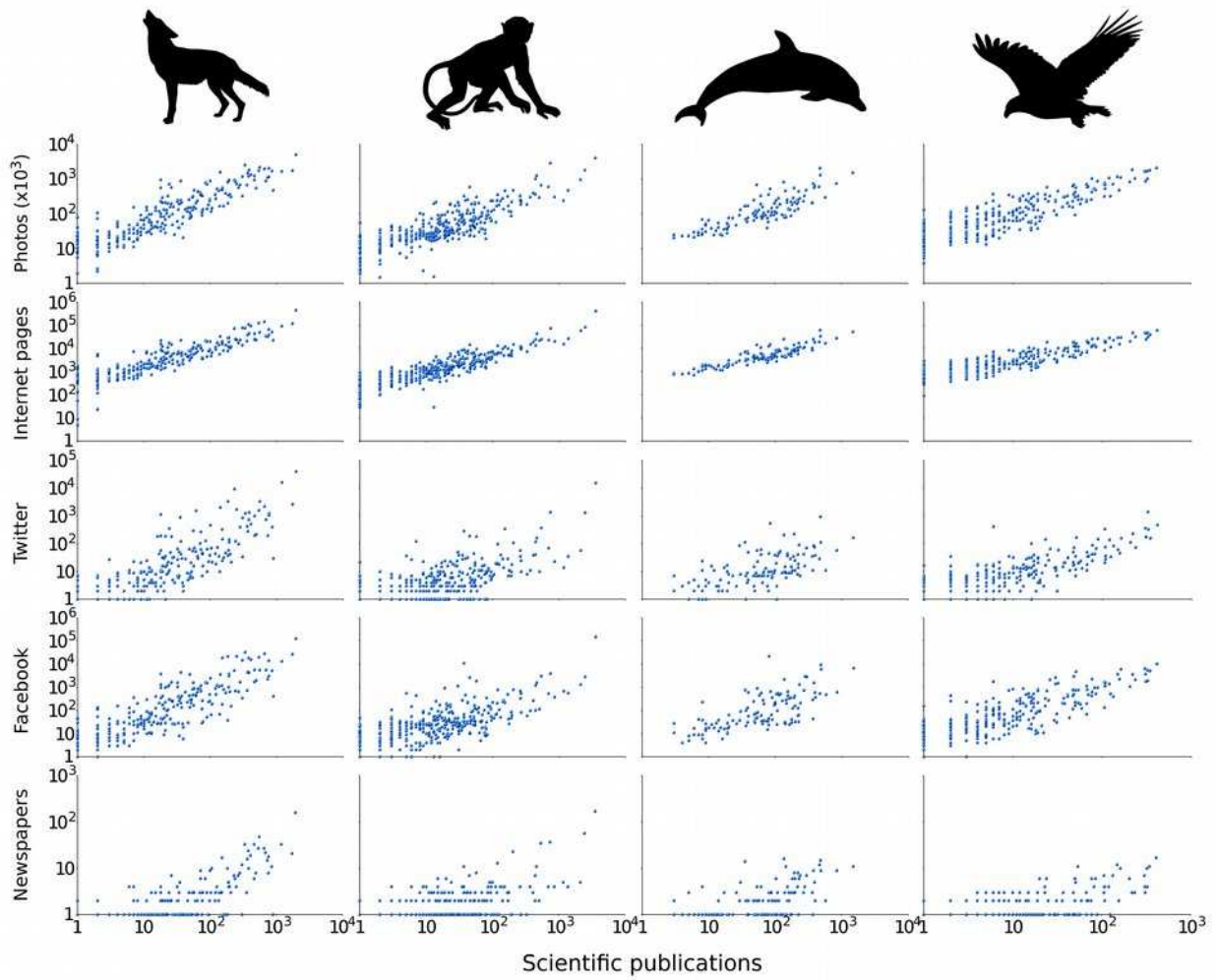
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574 **Figures**

575

576 **Fig. 1.** Relationship between the scientific attention (Web of Science) and coverage within different media sources  
577 (Internet pages, Twitter, Facebook, newspapers, and photographs posted on the internet) in different species groups  
578 (Carnivora, Primates, marine mammals and birds of prey); axes represent logarithmic scales. Presented data were  
579 transformed using  $x \leftarrow x + 1$ , in order to allow presentation in log-plots of results with the value of zero.



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587 **Fig. 2.** Proportion between the species coverage within different media sources (Internet pages, Twitter, Facebook,  
 588 newspapers, and photographs posted on the internet) and scientific publications (Web of Science) in different species  
 589 groups (Carnivora, Primates, marine mammals and birds of prey). Presented data were transformed using  $x \leftarrow x + 1$ ,  
 590 and the proportions were consequently log-transformed, using the following equation:  $\text{proportion} = \log[(x_m + 1) / (x_s +$   
 591  $1)]$ , where  $x_m$  and  $x_s$  respectively represent coverage within specific media source and scientific publications.

