



Dark wings, bright insights: a comprehensive analysis of corvid species in *Pokémon* games

Miguel A. Gómez-Martínez¹ & Michelle García-Arroyo²

¹Independent researcher, Lahti, Finland. ²University of Helsinki, Lahti, Finland.
Emails: gomez.miguelangel86@gmail.com; michelle.gcia19@gmail.com

*O crow,
why are you flying from here
to the noisy town?*

(Matsuo Bashō's haiku, English interpretation by Dmitri Smirnov)

Birds have been part of the human collective and incorporated as symbols in religion, art, science, and daily life across many cultures and time periods (Elphick, 2005). Because of their undeniable visual and acoustic beauty, remarkable abilities, and conspicuous presence in numerous different environments, these winged creatures often inspire and intrigue the human mind (Robinson, 2019). There are thousands of avian species in the world, taxonomically classified into many groups. Still, when it comes to intelligent and alluring birds, few can rival the captivating nature of corvids (Emery, 2006). The Corvidae family is composed of 23 genera and 128 species spreading across most regions of the world, including the birds commonly known as crows, ravens, jays, and magpies (Winkler et al., 2020).

The bond between people and corvids extends beyond the attention received for their curious behaviors. Their cognitive abilities enable them to problem-solve, exhibiting complex social cognition, memory, and even tool use (Emery, 2004). Approximately 25% of the corvid species have demonstrat-

ed the ability to adapt to human-modified environments (Benmazouz, 2021), thriving on the resources offered by these habitats. As many of these species are omnivorous, it is not uncommon that crows incorporate human-made foods into their regular diet, whether raiding overflowing trash cans (García-Arroyo et al., 2023), munching on roadkill (Schwartz et al., 2018), or stealing snacks from unsuspecting people and pets. Because of the remarkable capacity of corvids to coexist within cities, suburbs, farmlands, landfills, and even industrial landscapes, they have also established themselves as a ubiquitous presence in our everyday lives (Marzluff & Angell, 2007).

From ancient American civilizations to Asian folklore and European traditions, many corvid species – but particularly crows and ravens – have inspired myths and legends, becoming fascinating characters woven into the fabric of those cultural narratives (Król & Hernik, 2020). Crows have been considered bad omens related to the occult, evil, and death, particularly in Western-European beliefs: portrayed as familiars of witches (i.e., creatures or spirits summoned by a witch, usually to carry out tasks; Murray, 2008), depicted as feasting on the corpses of the fallen at the battle and thus associated to the devastating loss of life (Marzluff & Angell, 2007), or simply linked to the forthcoming of unfortunate events in fictional texts (Soares et al., 2019), they earned the collective nouns of “murder” and “unkindness” for crows and ra-

vens respectively.

However, the cultural depictions of corvids are not limited to negative connotations alone, with crows revered for their intelligence often being associated with qualities such as cleverness, resourcefulness, and adaptability. In many American indigenous cultures, corvids are seen as wise and cunning creatures, displaying remarkable problem-solving skills (Taylor, 2014). Similarly, in Norse mythology, crows were central to Odin as he used them to learn about the world: Muninn ['memory'] and Huginn ['thought'] (Marzluff & Angell, 2007).

In East Asian cultures, these animals are a symbol of filial gratitude and solar elements associated with leadership (Knode, 2003). Especially in Japanese folklore, corvids have been adopted into different representations and meanings. Yatagarasu (八咫鳥; 'eight-span crow') was a giant three-legged crow kami (god) that guided the first emperor; this mythical figure continues to endure, even being adopted as the emblem of the Japanese national soccer team (Molle, 2011). Likewise, in Ainu legends, crows play a vital role in saving people. These legends speak of crows retrieving the Sun after it was swallowed by a monstrous creature, as well as guiding the starving Ainu to a stranded whale for them to be saved (Ashkenazi, 2003).

Considering both the positive and negative cultural representations of corvids, it is not strange to find them still as part of modern literature, music, cinema, and video games. Such depictions occur in *Pokémon*, a media franchise with games focused on the exploration of areas to catch and train creatures (i.e., species of Pokémon) to battle against other trainers. The design of

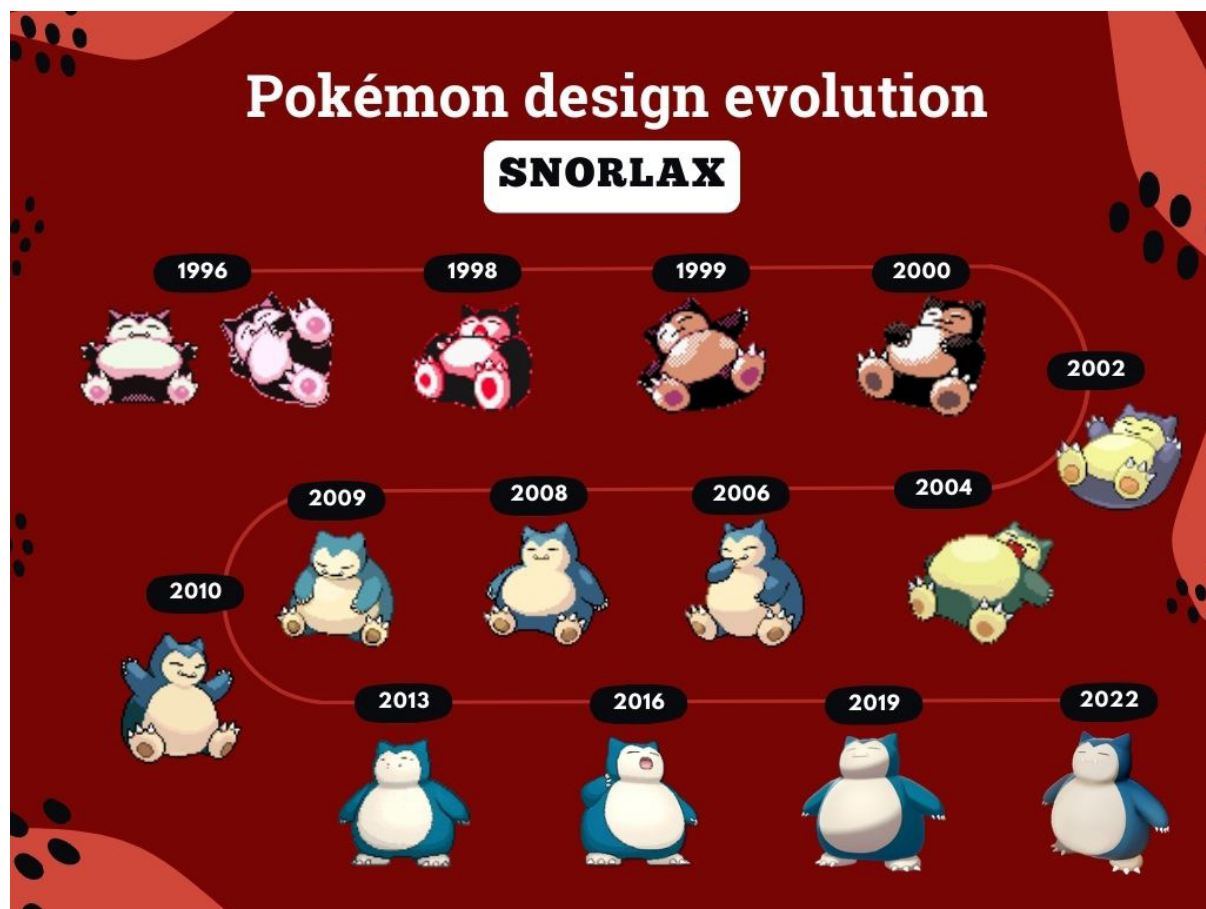


Figure 1. Timeline of the evolution of designs of Pokémon sprites using Snorlax as an example. It is possible to appreciate differences in colors and resolution improvement from the first 2D sprites to the 3D models featured in the most recent games. This figure also shows how it took 17 years for Snorlax to finally stand up. The Pokémon sprites are official artwork from the franchise (©Nintendo/Game Freak, 1995–2023).

each Pokémon species is based on different kinds of animals, plants, fungi, unicellular organisms, mythological creatures, and/or a mix of inanimate objects. Many of them are accurately depicted with high detail and their lore is based on the biology, behavior, or characteristics parallel to their actual counterparts in the real world (Mendes et al., 2017; Prado & Almeida, 2017; Kittel, 2018; Rosa et al., 2020; Carral-Murrieta et al., 2023).

Because of the above, we consider that *Pokémon* possess a huge potential to describe and explain natural science subjects in an accessible, enjoyable manner that transcends cultural and/or academic barriers. For this article, we assessed the Pokémon species based on or related to corvids. We analyzed their names in English and Japanese, and Pokédex entries to find references related to real-world species involved in the design and describe the cultural connections with their real-world counterparts.

CROWVOLUTION OF CORVID POKÉMON

The designs of Pokémon have continued to evolve in the franchise over the years, starting with simple sprites for Generation I, mainly due to the graphic limitations of the console in which the game was first released (launched for Game Boy in 1996). However, with time and new features and capacities of the following consoles, the designs started to include colored sprites (*Pokémon Sapphire/Ruby* for Game Boy Advance in 2002), animated sprites (*Pokémon Diamond/Pearl* for Nintendo DS in 2006), and 3D models (*Pokémon X/Y* for Nintendo 3DS in 2014). The subsequent graphic improvements have allowed the inclusion of more detailed designs and more realistic Pokémon species (Fig. 1).

The increase in Pokémon diversity has also made possible the expansion of lore about the Pokémon world concerning characters, regions, and even species variation. In the games, the information about Pokémon species is recorded as en-

tries in a hand-held, electronic encyclopedia called Pokédex. Entries on the Pokédex have changed with time and vary between games and generations, with some of them being remarkably accurate concerning the biology of both the Pokémon and the organism that it is based on. Additionally, Pokémon species names are available in more than one language (e.g., Japanese, English, French, German, Korean), which also provides clues about the identity of real-world organisms and objects that served as inspiration for the designs. Taking into account all these elements, we aim to identify the bird species or combination of species that served as inspiration for the design of the five corvid Pokémon.

Murkrow

First included in *Pokémon Gold/Silver* (1999), the English name Murkrow is most likely a combination of the words ‘murder’ and ‘crow’ referring to the collective noun for crows and the animal itself respectively. Regarding the Japanese version of the name (ヤミカラス, Yamikarasu) results from the combination of the words ‘yami’ (dark) and ‘karasu’ (crow). This allusion to darkness can also be derived from the word ‘murk’ also meaning “darkness that hinders vision” (Cambridge Dictionary, 2023).

Murkrow’s design derives partially from a carrion crow (*Corvus corone*), a widely distributed species in Europe and Central Asia that is also abundant in Japanese cities (Brazil, 2018; BirdLife International, 2023). In this context, we find another parallelism between Murkrow and the carrion crow as Johto (i.e., Generation II location) is based on the Kansai region of Japan, located in the southern-central region of the main island (Bulbapedia, 2023). While the appearance matches in shape and color, the characteristic yellow bill and feet are more commonly found in other corvid species such as the yellow-billed cough (*Pyrrhocorax graculus*) (Fig. 2).

On the other hand, the head feathers resemble a classical witch hat while the tail takes the shape of a broom, alluding to the



Figure 2. Official artwork of Murkrow (©Nintendo/Game Freak, 1995–2023), introduced in Generation II. The right panel shows the hypothesized inspiration species, the carrion crow (D. Davison; Wikimedia Commons, CC BY 2.0) and the yellow-billed chough (Mbdortmund; Wikimedia Commons, CC BY-SA 3.0).

image of a witch on a broomstick flight from the Western-European folklore. Some Pokédex entries refer to these traits, like the one included in *Gold* (“Feared and loathed by many, it is believed to bring misfortune to all those who see it at night”); this entry refers to the belief that some animals such as crows and black cats are bad omens because of their association with witchcraft (Nyakupfuka, 2012). This is consistent with Murkrow’s dual type (Dark/Flying) and category (Darkness Pokémon), with some of its moves representing malicious activities and mischievousness (e.g., Taunt, Foul Play, Sucker Punch, Torment, Thief; Bulbapedia, 2023).

A subsequent Pokédex entry from *Ruby/Sapphire* (2002) reads: “This Pokémon shows strong interest in anything that sparkles or glitters. It will even try to steal rings from women”, referring to the popular notion that corvids collect shiny objects. However, there is no scientific evidence that supports this idea, and could actually be a misinterpretation of the explorative behavior of corvids (Greenberg, 2003). The attraction of crows to shiny objects can be explained by neophilia (i.e., spontaneous attraction of an animal to nov-

el food items, objects, and places) that allows young birds to explore novel habitats and find different types of resources (Heinrich, 1995).

Honchkrow

The evolution of Murkrow first appeared with the launch of *Diamond/Pearl* (2006). This Pokémon’s English name is a combination of the words ‘**honcho**’ used to refer to a person in charge (e.g., a boss; Cambridge Dictionary, 2023) and ‘**crow**’ spelled in the same way as its unevolved counterpart. Similarly, the Japanese version name (ドンカラス, Donkarasu) uses the word ‘**don**’ which is an honorific prefix that was popularized in the USA to refer to the highest ranks in the mafia hierarchy (Devico, 2007), and ‘**karasu**’ (crow). This deviates from the previous association with darkness and places this Pokémon in its unique category of “Big Boss Pokémon” (Bulbapedia, 2023). Honchkrow has some characteristics of a crime boss, such as fedora-shaped head feathers and a plumage pattern resembling an elegant suit.

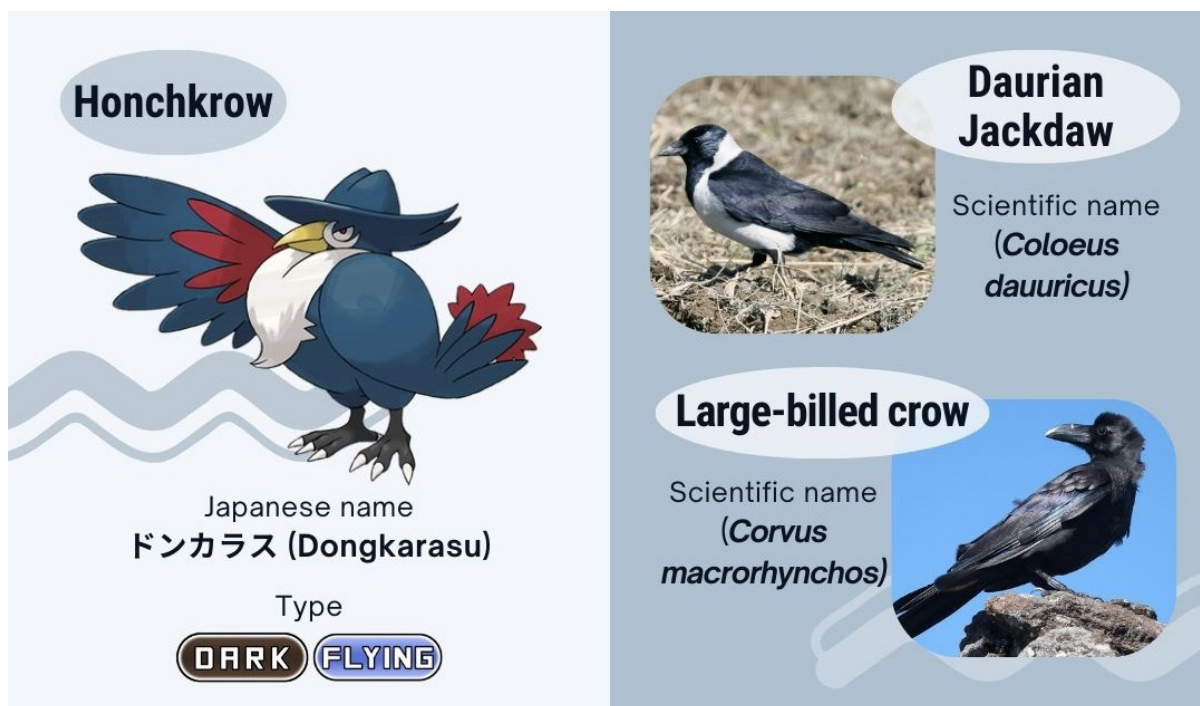


Figure 3. Official artwork of Honchkrow (©Nintendo/Game Freak, 1995–2023), introduced in Generation IV. The right panel shows two of the hypothesized inspiration species, the Daurian jackdaw (C. Moning; Wikimedia Commons, CC BY-SA 4.0) and the large-billed crow (Alpsdake; Wikimedia Commons, CC BY-SA 4.0).

According to Bulbapedia (2023), Honchkrow’s coloration is similar to that of a hooded crow (*Corvus cornix*); however, on closer inspection, the pattern on the breast of the animal does not match the white on Honchkrow’s design. Instead, we consider that this coloration pattern resembles more that of the Daurian jackdaw (*Coloeus dauuricus*) a rare winter visitor in Nansei Shoto north to Hokkaido (Brazil, 2018). We also considered the large-billed crow (*Corvus macrorhynchos*) as an inspiration species because of its sharpened bill, curved on the tip (Fig. 3). Additionally, the coloration of Honchkrow slightly resembles the dark blue metallic sheen present in the flight feathers of the adult birds (Matsubara, 2007). The distribution of both species extends to or near Hokkaido (Brazil, 2018; BirdLife International, 2023), being consistent with the Honchkrow distribution in Sinnoh, a region of the Pokémon world inspired by the geography of Hokkaido (Bulbapedia, 2023).

An interesting Pokédex entry from *Diamond* describes Honchkrow as follows: “Becoming active at night, it is known to swarm with numerous Murkrow in town”. From an

ecological perspective, this entry refers to a mixed flock behavior between the basic and evolved forms. Although flocking behavior (i.e., group of birds foraging or flying) is common for corvids and many other bird species, the specific case of mixed flocks of carrion crow and long-billed crow is infrequent despite their use of similar habitats and resources (Fujioka, 2020). Interestingly, the entry refers to these two Pokémon as nocturnal creatures (most likely because of their Dark Type association), as illicit activities are more likely to take place during nighttime, even when the active period of their real-world counterparts is daytime.

In the *Heart Gold/Soul Silver* editions (2009) the Pokédex refers to the unkindness of Honchkrow (“It is merciless by nature. It is said that it never forgives the mistakes of its Murkrow followers”), also alluding to the hierarchy ranks of these two Pokémon. This portrayal of crows as evil creatures – a shift from their historical veneration as wise and sacred creatures – could have its origins in the increase of crow populations in Japan and the damage they can cause to crop fields and livestock (Yoda, 2019). Moreover,

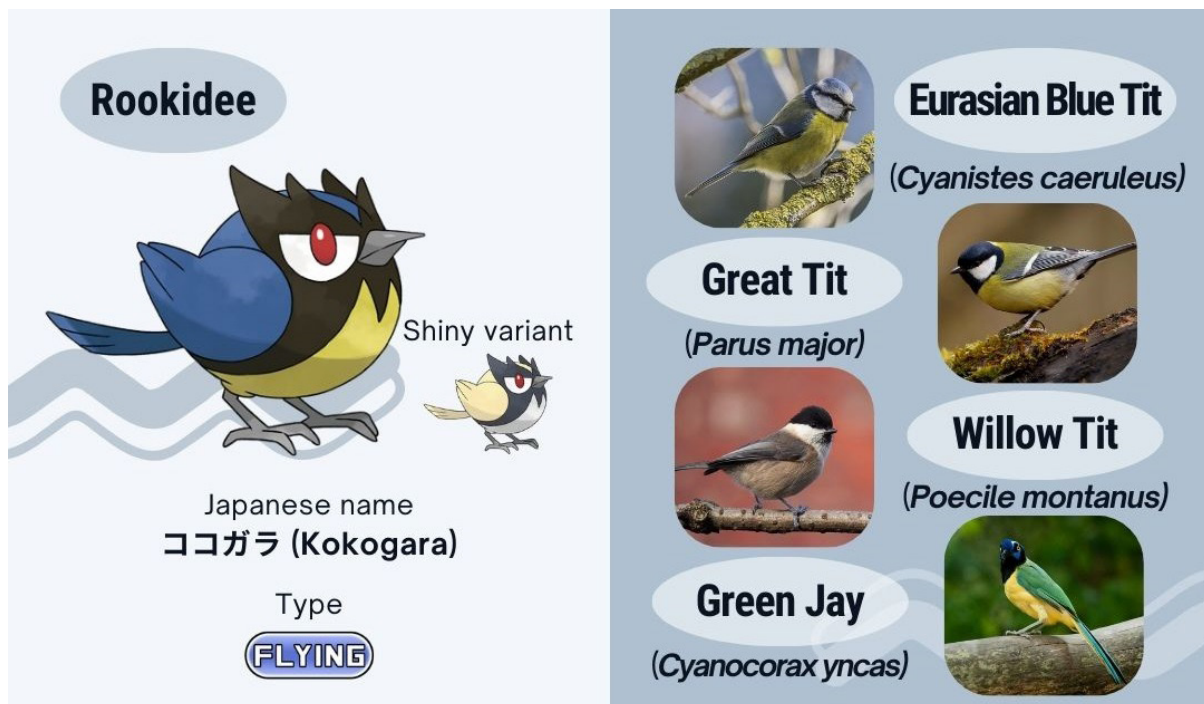


Figure 4. Official artwork of Rookidee and its shiny variant (©Nintendo/Game Freak, 1995–2023), introduced in Generation VIII. The right panel shows the hypothesized inspiration species, the Eurasian blue tit (C.J. Sharp; Wikimedia Commons, CC BY-SA 4.0); the great tit (F. Vassen, Wikimedia Commons, CC BY 2.0); the species similar to the shiny version and that shares the Japanese name, the willow tit (F.C. Franklin; Wikimedia Commons, CC BY-SA 3.0); and a corvid species with yellow plumage, the green jay (Dilankf; Wikimedia Commons, CC BY 3.0).

crows used to be considered a nuisance species in urban areas, due to a few records of crow aggression towards humans (Yoda, 2019).

Rookidee

This Pokémon appeared in the *Sword/Shield* (2019) games. The name is the combination of the words ‘rookie’ (i.e., a person who is new to an organization or an activity; Cambridge Dictionary, 2023) and ‘chickadee’, which refers to birds from the Paridae family, a group with no relation to crows (curiously, ‘rook’ is also the common name of another crow species: *Corvus frugilegus*). The Japanese name (ココガラ, Kokogara) results from the combination of the words ‘ko’ (child or small) and ‘kogara’, the Japanese common name for the willow tit (*Poecile montanus*), a name that makes note of the small size of the bird. The latter size reference could be a nod to Rookidee being the first form of the evolutionary line of Corviknight, thus the name also alludes

to an untrained or novice page. The willow tit also resembles the shiny version of the Pokémon; although, according to Bulbapedia (2023), the shiny version is supposed to be inspired by the Japanese tit (*Parus minor*).

The appearance of Rookidee resembles a small bird (being in the category of “Tiny Bird Pokémon”). Its body has a fluffy, spherical aspect similar to that of chickadees and tits, but particularly to those of the Eurasian blue tit (*Cyanistes caeruleus*) and the great tit (*Parus major*). Rookidee shares a yellow, blue, and white coloration pattern of the Eurasian blue tit, albeit in different proportions, and the distinct black and white mask of the great tit (Fig. 4). Blue and black are also common colors for some corvid species (e.g. jays, magpies), while yellow is restricted to only a few corvid species (e.g., New World jays), like the Inca jay (*Cyanocorax yncas*).

A recent Pokédex entry from *Violet* (2022) reads: “The females are fussier than the males. If another creature dirties a female Rookidee’s



Figure 5. Official artwork of Corvisquire (©Nintendo/Game Freak, 1995–2023) and its shiny variant, introduced in Generation VIII. The right panel shows the hypothesized inspiration species, the Steller’s jay (J. St. John; Wikimedia Commons, CC BY 2.0); the hooded crow (A. Trepte; Wikimedia Commons, CC BY-SA 2.5); and the species similar to the shiny version, the Eurasian jay (L. Viatour; Wikimedia Commons, CC BY-SA 3.0).

wings, it’ll peck the offender relentlessly in a burning rage”. This and all other Pokédex entries for this Pokémon make reference to its bravery and aggressive behavior, a description highly accurate regarding some tit species, who become aggressive when competing for resources with other birds. Conversely, a study recorded willow tit males being the ones characterized by aggressive behavior towards other males, because a dominant behavior is a strategy to improve mate protection in an intraspecific setting (Lahti et al., 1996).

Corvisquire

The evolution of Rookidee was also introduced in the *Sword/Shield* (2019) game. The Pokémon name is composed of the words ‘corvi’ as a reference to corvid or Corvidae (taxonomic family) and ‘squire’, the name of the young nobleman that served and helped a knight as a part of their training to eventually become a knight (Merriam-Webster, 2023). Therefore,

Corvisquire would be the intermediate part of the evolutionary line between Rookidee (i.e., a rookie page) and Corviknight (i.e., an experienced knight). The Japanese name for this Pokémon (アオガラス, Aogarasu) is the combination of the words ‘ao’ (blue) and ‘karasu’ (crow), an evident reference to the predominant feather color of jays and magpies. Both the shape and coloration pattern of the Corvisquire design resembles a Steller’s jay (*Cyanocitta stelleri*) with a black head, blue body, and even retaining the characteristic black crest appreciated both in the Pokémon design and the real-world species (Fig. 5), although this is an American distributed species (BirdLife International, 2023). The hooded crow also shares a similar plumage pattern with Corvisquire. Likewise, the appearance of the shiny version (i.e., shades of beige and gray) is inspired by the strikingly similar Eurasian jay (*Garrulus glandarius*).

The Pokédex entries available for Corvisquire remark about the intelligence of this species (*Sword*: “Smart enough to use tools in battle, these Pokémon have been seen picking up



Figure 6. Official artwork of Corviknight (©Nintendo/Game Freak, 1995–2023), introduced in Generation VIII. The right panel shows the hypothesized inspiration species, the common raven (F. Losada Rodríguez; Wikimedia Commons, CC BY-SA 4.0).

rocks and flinging them or using ropes to wrap up enemies”). In an interesting review, Lefebvre and colleagues (2002) found repeated tool true-use (i.e., objects collected from the ground and held on the bill or foot to be used for different purposes) from many corvid species. The use of objects as weapons by birds is uncommon, but interestingly a Steller’s jay individual was observed breaking a twig and using its sharp end as a weapon to attack an American crow (*Corvus brachyrhynchos*), in a display of aggressive behavior to access a food source (Balda, 2007). Although not mentioned in the entry, the use of tools as weapons could also be a reference to this Pokémon using a sword-like weapon, in a very similar way to the other swordsman Pokémon of this region, Sirfetch’d. In one of the most recent games, *Scarlet* (2022) the Pokédex entry reads: “It’s said that the reason behind Corvisquire’s high level of intelligence is the large size of its brain relative to those of other bird Pokémon”. This description proves to be spot-on, as many studies report the complex uses of tools by corvids in correlation with brain size (Lefebvre et al., 2002; Emery, 2004), as it is point-

ed out by the Pokédex entry.

Corviknight

This Pokémon is the fully evolved form of its evolutionary line, and together with Rookidee and Corvisquire, it was also introduced in the *Sword/Shield* (2019) game. The name of Corviknight is a combination of the word ‘**corvi**’ again as a general reference to corvids, but more specifically to the taxonomic genus that the common raven belongs to (i.e., *Corvus corax*) and ‘**knight**’. The official Japanese name is アーマーガア (Āmāgā) but it is also commonly romanized as ‘Armorga’. The latter name is the amalgamation of the word ‘**armor**’ and ‘**gā**’ possibly representing an onomatopoeic sound similar to cawing or squawking.

Both languages’ etymological origin perfectly reflects the morphological characteristics of Corviknight, as it resembles a common raven with its completely black coloration with a metallic dark blue sheen, broad bill, and robust body. Unlike its pre-

vious forms, Corviknight is a dual-type (i.e., Flying/Steel) with its design blending the metallic sheen of a raven's feathers into an armor-like structure (Fig. 6).

This Pokémon was introduced in Generation VIII, which takes place in the Galar region, based on the geography of the United Kingdom (Bulbapedia, 2023). This fact and the crown aspect of the head feathers of Corviknight have led to the belief that the Pokémon is based on the ravens protecting the Crown in the Tower of London. According to the legend, “*If the Tower of London ravens are lost or fly away, the Crown will fall and Britain with it*”, thus a group of six common ravens is kept and tended at that location since the time of King Charles II (i.e., 1660–1685; Historic Royal Palaces, 2023).

The Pokédex entry of *Sword* reads as follows: “*This Pokémon reigns supreme in the skies of the Galar region. The black luster of its steel body could drive terror into the heart of any foe*”. The way it refers to the imposing presence of Corviknight is contrastingly different from Murkrow and Honchkrow, where negative adjectives related to malice and bad omens are used. The last phrase of this entry could also be an allusion to medieval Black Knights (i.e., character trope that appears in literature, cinema, and other media), characterized by being mysterious, tragic, and overall feared by other characters or antagonists (Ashe, 2018). The shift in attitude towards these corvid Pokémon is also clear in the *Shield* Pokédex entry (“*With their great intellect and flying skills, these Pokémon very successfully act as the Galar region’s airborne taxi service*”). It remarks on the outstanding intelligence of these birds – as with Corvisquire – but, additionally, it points out how people in this region recognize their ability as useful for serving society. This is a final reference to the evolutionary line of Corviknight being more appreciated than the misunderstood Honchkrow line.

CONCLUSION

Across the evolution of the *Pokémon* video game franchise, we can see how both the

designs and lore behind Pokémon species have evolved too. At least in the case of the five reviewed corvid-inspired Pokémon, we can see how the use of adjectives in Generation II is negative and based on the superstitions and cultural prejudices that are also common for many other misunderstood animal species (Nagy & Johnson, 2013). It took 20 years (from the release of *Gold/Silver* in 1999 to the release of *Sword/Shield* in 2019) for the franchise to include other corvid-inspired Pokémon species, with developers deciding to provide a different perspective. Not only the graphic and other technological features were improved, but also the accuracy of the lore for these fictional creatures based on information available in the scientific literature about the fascinating ecology and behavior of their real-life corvid counterparts. Either a coincidence or deliberate research work from developers, the information reviewed for this article is an excellent example of how Pokémon is not only one of the most successful media franchises in the world but also an exceptional and fun way to learn about wildlife, natural sciences, and cultural references from many places. Ultimately, we highlight the potential of the *Pokémon* world as a tool to engage with people – particularly children –, spark an interest in natural sciences careers, and replace outdated beliefs with new evidence-based arguments in favor of nature conservation.

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ABOUT THE AUTHORS

Dr. **Miguel A. Gómez-Martínez** is a doctor by profession, but a geek at heart. His research is mainly focused on avian urban ecology. However, he is also interested in a broad variety of subjects such as avian behavior, bird migration, insular bird ecology, conservation, ethnobiology, and science dissemination. He is also a big fan of video games (mainly JRPGs) and anime. Specifically, one of the first games he played was the *Pokémon Blue* version and he is convinced that it was one of the reasons to choose biology as a career.

Michelle García-Arroyo, MSc., is a Ph.D. student in wildlife biology, with her research focused on avian urban ecology. She is fascinated by the feathered creatures' quirky behaviors and enjoys delving into the history and reasoning behind the widespread pop culture and internet presence of these lovely *birbs*. She firmly believes that the study of human-wildlife interactions from the cultural perspective is a fundamental axis for biodiversity conservation in an increasingly urbanized world.