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## **Making Wildlife Viewable: Habituation and Attraction**

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### **Abstract**

The activity of wildlife viewing rests on an underlying contradiction. Wild animals are generally human-averse; they avoid humans and respond to human encounters by fleeing and retreating to cover. One would therefore expect human viewing of wild animals to be at best unpredictable, intermittent, and fleeting. Yet in recent decades, wildlife viewing has become a major recreational activity for millions of people around the world and has emerged as a thriving commercial industry. How can these two things—widespread wildlife intolerance of humans and large-scale human observation of wildlife—be squared? The answer is that wild animals are only viewed on this scale because they have been *made* viewable through human intervention. This article examines two kinds of intervention—habituation and attraction—that change wildlife behavior toward humans and render hitherto elusive animals susceptible to regular, proximate, and protracted human viewing.

### **Keywords**

attraction, habituation, provisioning, wildlife tourism

### **Introduction**

Wildlife viewing or watching has become established as a popular leisure activity and an industry that is worth many millions of dollars. It ranges from informal visits to nearby countryside to see local wildlife to organized visits to remote, often overseas locations to see exotic wildlife. Wildlife viewing can be defined as the recreational watching of wild animals in their natural habitat as opposed to zoo captivity. The essential feature of wildlife viewing is that it involves humans going to where the animals are, as opposed to the classical city zoo, which involves the animals moving to (strictly speaking, being brought to) where humans are. This is what gives wildlife viewing its specific appeal. “There is nothing like the indelible thrill of meeting a wild animal on its own terms in its own element” (Ackerman, 2003, p. 41).

Wildlife viewing involves a wide variety of animals, including birds, cetaceans, primates, terrestrial herbivores, and terrestrial carnivores. Approaches to wildlife viewing can vary widely. Some wildlife viewers accept as a matter of course that finding animals is unpredictable and uncertain and value the experience even when they don't manage to see the animal, while appreciating actual sightings all the more for their rarity (Rolston, 1987; Orams, 2000; Montag, Patterson, & Freimund, 2005). But for many wildlife viewers there is an expectation of regular, high-quality sightings. As wildlife viewing has become a major industry that employs large numbers of people, the emphasis placed on animal sightings has increased, to the point where many commercial operators market their tours with the promise of close-up views.

Often associated with ecotourism, wildlife viewing tends to be seen as a low-impact activity that is consistent with wildlife conservation. Wildlife viewing is frequently represented as a "nonconsumptive" use of wildlife, in contrast to "consumptive" uses of wildlife such as hunting (Langenau, 1979; Duffus and Dearden, 1990). Unlike hunting, with its lethal effect on animals, nonconsumptive uses such as wildlife viewing can be defined as "a human recreational engagement with wildlife wherein the focal animal is not purposefully removed or permanently affected by the engagement" (Duffus and Dearden, 1990, p. 215). Wildlife tourists *watch* the lives of wild animals, whereas hunters *take* the lives of wild animals. A successfully hunted animal is no longer available for future hunting, but an animal who has been seen continues to be viewable by subsequent visitors. It is in this respect that wildlife viewing is nonconsumptive or nondepletive. On the face of it, the two activities—viewing and hunting—could not appear more different.

Some authors, however, have criticized the dichotomy between wildlife viewing as nonconsumptive and hunting as consumptive. One line of criticism has been that hunting is not necessarily depletive of wildlife—that is, that hunting is consistent with the conservation of animal populations, even as it involves the taking of individual animal lives (Tremblay, 2001). Another line of criticism is that wildlife viewing is also a form of consumption—that it represents "ocular consumption" (Lemelin, 2006). Lemelin challenges the term "nonconsumptive" on the grounds that it conceals the potentially considerable impacts that wildlife viewing can have on the animals watched.

I will suggest that there is a fundamental similarity between hunting and viewing as activities. Like hunters, viewers need to *find* their animals. Wild animals often range over large areas and across difficult terrain, and some understanding of their ecology and behavior is likely to be necessary to locate them. Viewing, like hunting, may well require a knowledge of the movements of wild animals and an ability to track them by reading the landscape for signs

of recent presence. Even then, locating the animal is likely to be highly uncertain, to the point where, at times, it approximates to finding the proverbial “needle in a haystack.” Hunting, as predation, must contend with what has been dubbed the “anywhere but here principle”: “For a predator to succeed, the predator must manage to be in exactly the same place as the prey at exactly the same time; for the prey to succeed, it need only be anywhere else” (Barrett, 2005, p. 219). This same asymmetry applies to wildlife viewing: other things being equal, the odds are against viewers finding the wild animals they wish to view.

Whale-watching, for example, is confronted with the problem of locating and accessing the whales to begin with, which may be far from easy, given the mobility of whales and the huge area of ocean through which they range (Wilson and Wilson, 2006). Operators may well have to travel some distance and for some time to reach the points on the whales’ migratory routes where they can be viewed. As most whale-watching guidebooks point out, whales are often unpredictable, and there can be no firm guarantee of a sighting (Gilders, 1995; Gill and Burke, 2004; Kreitman and Schramm, 1995).

Unlocatable animals are invisible animals. If wild animals cannot be found, they cannot be seen. But the logistical challenge facing the wildlife watcher does not stop there. Even when the general whereabouts of wild animals can be determined, there remains the problem of their probable aversion to humans. Wild animals are normally wary of a human presence and reluctant to expose themselves to human eyes. For this reason, even though animals may be in the vicinity, they are still likely to be difficult to see, let alone to view with any clarity or for any length of time. What might be called *restricted detectability* is a characteristic of most wildlife.

The background to this restricted detectability of wild animals lies in their antipredatory adaptations—physical and behavioral—which make them less visible. The obvious morphological example is camouflaging coloration, which makes an animal less easy for a predator to detect (Caro, 2005). Common behavioral responses to the threat of predation range from generalized vigilance and avoidance to reactive concealment and flight (Miller, 2002; Caro, 2005; Gursky and Nekaris, 2007). A broad distinction can be drawn between avoidance behaviors that “reduce the probability of encounters with predators” and “response behaviours that operate once a potential predator has been detected and function to avoid attack” (Griffin, Blumstein, & Evans, 2000, p. 1320). The former strategy relies on early detection of the predator—“seeing it before it sees them” (Hart and Sussman, 2005, p. 181)—which allows the animals to flee preemptively. The imperative of avoiding predation may mean a preference for foraging, moving, and resting in places with good

concealment cover or being active at times when encounters with predators are least likely (Elton, 1939).<sup>1</sup>

Antipredatory wildlife behavior is likely to be triggered by a human approach or human presence. On account of our long history of hunting animals of all kinds, we humans are widely viewed as predators. The zoo biologist Heinrich Hediger is one of many commentators to have made this point:

Man often plays the part of the predatory animal, in fact there is hardly a species of animal that has not been hunted by him, often for centuries or even thousands of years. Thus it may be said that man, with his world-wide distribution and his long-distance weapons represents the arch-enemy standing, so to speak, at the flash-point of the escape reactions of animals. (Hediger, 1968, p. 40)

Human hunting in the past has left a legacy of human-aversive behavior in wild animals in the present (Washburn and Lancaster, 1968). Avoidance and flight therefore tend to be the default behaviors of wild animals toward humans. So pronounced can this perception of “humans as predators” be that even seemingly unobtrusive forms of human presence can trigger fear and associated behaviors in wild animals (Caine, 1992). What this means is that, while humans may draw a sharp distinction between viewing and hunting, for the animals themselves such a distinction is likely to be lost and antipredatory behavior provoked by *any* anticipated or actual human presence.

That said, the visual focus of humans on animals that is characteristic of wildlife viewing is likely to make humans seem all the more predatory:

A simple cue that appears to trigger antipredator responses in other species is the presence of eyes and, more specifically, directed gaze or a contingently following gaze. . . . [G]aze direction is an important cue to what the predator is attending to. (Barrett, 2005, p. 208)

A feature of human viewing of animals is the tendency to stare, an intensive form of seeing that is especially likely to trigger alarm in the animal (Tudge, 1992). In general, the very act of viewing will tend to be experienced as potentially threatening by the animal viewed and to lead to heightened wariness toward, if not immediate escape from, the human viewer.

That human viewing has predatory associations for the animals viewed is substantiated by the existence of a large and growing literature on the direct disturbance effect of wildlife viewing on the animals watched (see, for example, Edington and Edington, 1986, Ch. 3; Liddle, 1997; Green and Higginbottom, 2000). The nearby presence of wildlife viewers and ecotourists can provoke a heightened state of vigilance and nervousness in the animals

watched, and distract them from other kinds of behavior such as foraging, resting, breeding, and conspecific social interaction (Mathieson and Wall, 1982; Roe, Leader-Williams, & Dalal-Clayton, 1997; Newsome, Dowling, & Moore, 2005). Animals so disturbed incur a cost on account of being diverted from these other kinds of behavior (Frid & Dill, 2002). Wildlife viewers may be kindly disposed to the animals they want to watch, but this message has not yet reached the animals themselves, for whom humans continue to be viewed as potential predators. In this sense, wildlife viewing takes place under the shadow of the hunt.

Heinrich Hediger has argued that the flight response of a wild animal is the primary barrier to its usefulness for human beings:

If we look more closely, it becomes clear that the primary reason for usefulness as domestic animals to man is not the horse's pulling powers, nor the dog's intelligence, nor the cow's milk capacity, nor the hen's egg output, but is basically a very different domestic quality, namely, the disappearance of that tendency to escape, so fundamentally important for their wild ancestors.... Escape tendency excludes usefulness. (Hediger, 1968, p. 49)

Hediger's point that escape behavior is inconsistent with animal usefulness can be readily extended from mainstream forms of domestication to the recreational observation of wild animals. Together with the problem of locating them, the human-aversiveness of wild animals poses a major challenge for the wildlife viewer. Even when the whereabouts of animals can be confidently determined, there remains the difficulty of sighting animals that are disposed to conceal themselves or flee instantly from encounters.

If wild animals typically avoid humans, the question arises as to how wildlife viewing could ever occur in the first place. After all, wildlife viewing generally refers not to distant, fleeting glimpses of retreating animals, but to close-up, protracted observation of animals who stand their ground. Typically, among wildlife viewers, a premium tends to be placed on proximity. Important benchmarks of intimacy include making eye contact with the animal (Servais, 2005), getting to within touching distance of the animal (Schänzel and McIntosh, 2000), and actually making physical contact through touching and stroking the animal (Gilders, 1995, Ch. 2), being touched by the animal (Kertscher, 2000), or even holding and cuddling the animal (Russell, 1995). Proximity is also important because it can make visible behaviors that are difficult, if not impossible, to observe at a distance. In her study of whale-watching trips in Hervey Bay, Queensland, Sue Muloin found that "seeing many whales close to the boat displaying a variety of behaviours" was important in determining tourist satisfaction levels (Muloin, 1998, p. 212). Lloyd

and Ajarova (2005) have made a similar point in relation to chimpanzee viewing in Africa, where, for example, the observation of tool-use is conditional on being able to get close to the animal for an extended period of time.

For their part, guides or operators may well be inclined to provide tourists with close-up views of wildlife in order to ensure satisfaction (Goodwin, Kent, Parker, & Walpole, 1998; Litchfield, 2001; Reynolds and Braithwaite, 2001), while the promise of proximity is central to the appeal of many wildlife viewing operations (Matt and Aumiller, 2002; Carwardine and Watterson, 2002; Hoyt, 2003). As a result of this tendency in wildlife tourism, wild animals can find themselves surrounded by crowds of people. Amboseli National Park in Kenya reportedly “allows as many as 30 vehicles to crowd around a single group of cheetahs” (Roe et al., 1997, p. 44), while boat-crowding is known to occur in whale-watching (Spong and Symonds, 2003) and dolphin-watching (Bearzi, 2003). The commercial reality of much wildlife viewing means that a good, close-up view is imperative. “You must be able to get close up. Distant wildlife does not sell, the experts agree” (Newlands, 1997, p. 20).

But how—given the wild animals’ typical flight response to humans—can such intimate observation happen? How can clear, close-up, and protracted sightings of animals occur when, by their very presence, human observers tend to repel the animals they want to see?

One logical answer, of course, is what might be called the “invisible man” scenario: that we humans can watch wildlife as long we do so from a concealed vantage point that prevents the animals from detecting our presence. The use of concealed observatories or “blinds” is well-known to birdwatchers but is also found in other kinds of wildlife viewing (Shomon, 1998; Ryan, Hughes, & Chirgwin, 2000). In an essay in which he articulates a “new ethic for whale watching,” Erich Hoyt argues that such one-way viewing represents the ideal way to proceed: “[t]he best way to observe wild animals is to watch without being noticed, to become invisible, like the birdwatcher in the blind” (Hoyt, 2003, p. 176). The undeniable logic of the blind is that invisible or undetectable humans would not trigger antihuman flight behavior and would therefore allow animals to be viewed behaving in a way unaffected by the act of observation.

But blinds are the exception, rather than the rule, in wildlife viewing for a number of reasons. First, they are not always effective; their efficacy relies almost entirely on their being positioned in the right place to begin with—based on a knowledge of wildlife whereabouts and movements. Where such knowledge exists, blinds can be used successfully—for example, next to waterholes (Sankhala, 1999). But even then, there remains the challenge of reaching the blind without disturbing the animals in question, and this often means

that the watcher must be prepared for a long stay at the blind. Wildlife photographers may be ready to undertake prolonged vigils at observation blinds (Weston, 2005), but ordinary wildlife tourists, with tighter schedules and lower hardship thresholds, may not. For this reason, blinds are likely to be inappropriate or ineffective when it comes to the more popular forms of wildlife tourism.

Thus, the question remains: in the absence of blinds, how is wildlife viewing possible, given the tendency of wildlife to flee from humans? I shall argue that it occurs by means of human interventions that serve to *make* wildlife watchable. There appear to be three main ways in which wild animals can be made available for human viewing: capture and confinement; habituation; and attraction. The main focus in what follows is on habituation and attraction and their role in facilitating in situ wildlife viewing, but let us first examine briefly the role that captivity can play in creating viewable wild animals.

### Capture and Confinement

The classic zoo consisted of animals who had been captured in the wild (in some “exotic” place) and then confined in cages and enclosures where they could be displayed to the home public. By capturing and confining wild animals, the zoo solves the problem of locating animals. The public knows that, by visiting the zoo, they will find a range of exotic animals on display at designated sites within the zoo grounds as laid out on the zoo map and indicated on signposts. But, of course, the zoo does much more than this. As an institution for the display and confinement of wild animals, the zoo also solves the problem of detecting cover-loving or human-avoiding animals by inserting them into sites where they can be clearly and protractedly viewed by the public. Zoo spaces are designed with the aim of achieving the “maximum visibility” of the animals (Mullan and Marvin, 1999, p. 47). Animals who rely on cover in the wild become fully exposed in the zoo. This makes the zoo doubly unnatural for the animals within it: they are subject not only to forcible *enclosure*, but to forcible *exposure*, too.

Zoo display clearly “works,” in the sense that it makes directly and proximately visible animals who would not otherwise be seen, but this achievement comes at a price. The zoo displays animals by decontextualizing them, both naturally (habitat) and socially (social groupings), the effect of which is to curtail within the captive environment behaviors associated with life in the wild. Although visitors to the zoo are generally able to see this or that animal there, they are seldom able to observe the range of behaviors shown by those

animals in their natural habitat. Modern zoos have, of course, sought to address this problem through enrichment initiatives (Shepherdson, Mellen, & Hutchins, 1998), but even in the “enriched” zoo there is still likely to be a big difference between the animal’s pattern of behavior in captivity and that in the wild. In sum, the zoo answer to the problem of wild animal viewability is open to the objection that, while it maximizes the *physical* visibility of the animals it displays, it fails to make them *behaviorally* visible. In a sense, the best the zoo can do is to offer a close-up view of behaviorally diminished animals. This is the background to the demand for what might be called holistic viewing of wild animals—that is, to see animals in context. This is precisely what wildlife viewing is supposed to provide.

### **Habituation**

How, then, does wildlife viewing work? How can wild animals predictably and consistently be viewed in situ, given the difficulties in locating and detecting them? One answer is habituation. Habituation is “a waning of response to a repeated, neutral stimuli,” in this case, human presence (Whittaker and Knight, 1998, p. 313). It is the neutralization of a wild animal’s flight reaction to humans. Habituation occurs where an initial disposition to escape from humans wanes and is replaced by tolerance of a human presence. Habituation is often seen as synonymous with taming and in fact has been described as a “taming process” (Woodford, Butynksi, & Karesh, 2002, p. 153) and as making wild animals “unnaturally tame to approach by humans” (Reynolds and Braithwaite, 2001, p. 35).

The habituation of wildlife has been pioneered by zoologists, especially primatologists. Fieldworker habituation involves the person “approaching the same animals day after day, and remaining quietly near them until he is accepted as an innocuous part of the surroundings” (Schaller, 1965, p. 626). This is not at all easy and demands considerable patience. So wary are wild animals of humans that it can take years to arrive at a situation where wild primates can be observed at close quarters (Butynski, 2001; Tutin and Fernandez, 1991).

Through habituation, primatologists have often been instrumental in making possible primate tourism. In some cases, tourism has been an unintended by-product of habituation originally undertaken for the purpose of primatological research. This, of course, was the case with the mountain gorillas of Rwanda, who were habituated by Dian Fossey for the purpose of primatological research. Although Fossey herself was famously critical of gorilla tour-

ism (Fossey, 1983), her success at habituating gorillas was what made gorilla tourism possible. But there are also examples of habituation expressly carried out for the purpose of tourism, including gorilla groups in Uganda (Hanson, 2001) and chimpanzee groups in Uganda (Lloyd and Ajarova, 2005).

Habituation alone, however, is not enough to make gorilla tourism possible. In order to be watched, gorillas must first be located. For gorilla tourism to work commercially, there has to be a limit on the time spent searching for gorillas and a reasonable prospect of finding them. Much effort is therefore expended in tracking gorillas in the forest environment. The solution that has been developed is to use trackers to follow or tail the gorilla troop to determine its whereabouts (Westwood, 2006; Cox, n.d.). It is not the tour party as such that tracks gorillas, but rather a separate party of trackers. There is a division of labor between the guides (who deal with the tourists) and the trackers (who deal with the gorillas) (Lepp, 2007).

This seems to have been a successful formula in terms of establishing a tourist enterprise, yet it still leaves operators with limited control and a high level of uncertainty. Trackers do not always know where gorillas are, and this can lead to frustration among tourists who fail to see gorillas. Tour parties may have to spend many hours looking for gorillas in the forest and on some days come away without having seen a single gorilla. But because they expect to see gorillas, tourists “may heap abuse upon the park guides and rangers if they do not (personal observation)” (Litchfield, 2001, p. 117). But the difficulty of gorilla tourism is only compounded by the environmental invisibility of the gorillas. Even when they have been located, habituated gorillas are still hard to see clearly because of dense forest vegetation. In his memoir from the Bwindi Impenetrable Forest in Uganda, Thor Hanson describes nearby gorillas in the forest as “visible only as a group of indistinct shadows and leaf-tremors” (2001, p. 163). The forest undergrowth may well impede the tourists’ view of the animals and hinder tourist photography (Greer and Cipolletta, 2006). All too aware of this problem, guides do what they can to alleviate it by removing or cutting away extraneous vegetation to give tourists a clearer view (Cox, n.d.).<sup>2</sup>

Uncertainty is, in fact, a widespread feature of wildlife viewing because of the difficulty of locating nomadic or ranging animals within the time frame of the tourist visit. Operators draw on a knowledge of wildlife behavior to predict the presence of animals in particular places, such as breeding sites, resting sites, feeding grounds, and waterholes or along migratory routes (Duffus and Dearden, 1990; Orams, 1996; Estes, 1999). But even where operators have such knowledge, wildlife sightings can remain unpredictable, especially where the environmental visibility of the animal in question is low in any case. It is unsurprising, therefore, that wildlife-viewing operators tend to be receptive to

additional ways of reducing the uncertainty of locating animals, particularly if they also hold out the prospect of increased visibility of the animals once located. It is for this reason that many wildlife-viewing operations opt to attract, rather than simply habituate, animals.

### **Attraction**

Humans can make wild animals viewable by attracting them to particular places where they can be seen. There are many examples of organized human intervention through the provision of food and water to fix the whereabouts of wild animals and enhance their viewability to tourists. In American national parks, garbage dumps became *de facto* provisioning sites for bears, which attracted large numbers of visitors, who watched the bears as they foraged through the garbage (Schullery, 1980); in East African safari parks, carcasses have been used by park staff to attract lions and leopards to particular viewing spots (Edington & Edington, 1986); in Nepal and India, tigers are provisioned with buffaloes in order to expedite tiger-watching for tourists (McDougal, 1980); and on the Indonesian island of Komodo dead goats were used until 1994 to attract large monitor lizards (or “dragons”) for tourists to view and photograph (Walpole, 2001).

The use of food provisioning is not limited to terrestrial wildlife, but is also used to expedite tourist viewing of aquatic wildlife such as manatees (Shackley, 1992), sharks (Carwardine and Watterson, 2002), and stingrays (Lewis and Newsome, 2003). The water hole is another important site in wildlife tourism. In East Africa, tourist lodges have been built next to existing water holes in order to expedite tourist viewing of wildlife (Donnelly, Whitaker, & Jonker, 2002; Shomon, 1998, Ch. 3), and in other cases an artificial water supply is used (Edington and Edington, 1986; Goodwin et al., 1998; Suzuki, 2007).

The regular feeding of wild animals can make them much more viewable than they would otherwise be. Against the background of the unreliability of sightings in the wild, luring wild animals through food handouts is “attractive for tourists and tourism operators alike because it increases the likelihood of actually sighting the animals” (Orams, 2002, p. 283). It works by enticing the animals to a place—the feeding spot—where they can be clearly seen. This means that the selection of the place where food handouts are dispensed, and where animals come to feed on the handouts, assumes critical importance. Animal acceptance of the human food handouts is not, in itself, enough; it must occur in the right place. The aim of the handouts is not, after all, simply to fill animal stomachs but to make the animals visible as they feed.

This kind of attraction strategy can bring people face-to-face with animals. Because of the close proximity to wild animals that it affords, artificial feeding can make possible a much greater sense of intimacy and contact. Proponents hail supplemental feeding for its “potential to manipulate wildlife distribution and behavior for close, benign, and extraordinary viewing experiences” (Gill, 2002, p. 222). Conversely, simple habituation, while it makes the animal available for viewing, tends not to lead to the kind of close-up viewing achieved through provisioning. If habituation helps to bring wildlife into view, provisioning can give tourists a ringside seat.

### **Comparing Attraction with Habituation**

There is considerable overlap between provisioning and habituation. They share the aim of getting wild animals to accept the presence of humans. Like habituation, provisioning offsets the human-aversive behavior of wildlife, but it does this in a distinctive way—by using the leverage of food handouts. The animals tolerate a human presence, as it were, in return for the feeding opportunity available to them. Provisioning uses the animals’ attraction to food to offset or neutralize their aversion to humans. In this connection, we can recall how commentators have characterized human food handouts to wildlife as a form of bribery (Rowell, 1972; O’Leary and Fa, 1993; McGrew, 2004). According to this description, provisioning is an interaction in which the human side exploits the animal’s appetites or greed for material gain to make it do something (tolerate humans) it would otherwise not do.

There are also major differences between habituation and provisioning. One main difference has to do with the timescale in which the process is completed. As we have seen, habituation is often a slow process that can take years, whereas the use of food handouts can drastically speed up the process of familiarization. By rapidly habituating wild primates and creating the conditions for intimate observation of their behavior, provisioning can greatly increase the efficiency of field research (McGrew, 2004). In his field study of orangutans, Herman Rijkssen makes the point that provisioning—even the limited form he employed in Sumatra—was a means of “accelerated habituation,” which saved him time (1978, p. 18).

Another difference has to do with the behavior of provisioned animals toward humans. While habituated animals tolerate a human presence, provisioned animals become positively attracted to humans, whom they associate with food. The giving of food to wild animals may be represented positively as an expression of kindness, intimacy, friendship, or trust across the species barrier (Steinhart, 1980; Lott, 1988; Bulbeck, 2005). In Japan, the monkey

park was originally represented as a place where visitors could go and “play” with monkeys by feeding them, and this food “exchange” was the centerpiece of the tourist visit to the park (Knight, 2005). In this situation, visitors cease to be simply viewers of the animals but become interactants with them as well.

The animals’ relationship with the food-giver changes over time, however. In the early stages, the animals may be passive recipients of the food handouts, but eventually they tend to become active solicitors of food from humans, including tourists in sites where they feed the animals directly. “Begging” behavior toward tourists is reported for a wide range of animals including “panhandling” bears in America (Tate, 1983), deer in American national parks (Hockett, 2000), dolphins in Australia (Orams, 1995), iguanas on the Galapagos Islands (Edington and Edington, 1986), vervet monkeys in Africa (Lee, Brennan, Else, & Altmann, 1986), and macaques in Asia (Wheatley, 1999; Knight, 2005). Longer term, provisioning of wild animals for tourism can also lead to aggressive and violent behavior toward people (Tate, 1983; Lee et al., 1986; Zhao and Deng, 1992).<sup>3</sup>

Another difference between habituation and provisioning is that the latter localizes the animals. This occurs by means of dispensing the food handouts at a designated site—the feeding station. Where food handouts are regularly offered, the animals tend to incorporate the site into a feeding routine, which allows tourist operators to predict with a greater degree of certainty the whereabouts of the animals at a given time and therefore to organize viewing on a more reliable basis. As Matthew Walpole puts it in relation to monitor lizard (“dragon”) tourism in Indonesia, provisioning became “the cornerstone of a system that evolved to provide rapid access to dragons for quick-visiting tourists on tight cruise schedules” (2001, p. 71). The tighter the time budget of the tourists, the more appealing to tourist operators provisioning is likely to become. In this way, provisioning can serve to minimize on-site search time by inserting the animals into a space of display where they can be immediately observed upon arrival. By effectively subtracting search time from the visit, provisioning makes for a much more efficient form of wildlife viewing.

Provisioning can be said to enhance the efficiency of wildlife viewing in another sense, too. In addition to localizing animals, provisioning offers tourist operators the advantage of foregrounding the animals in a place where they can be clearly viewed. As we saw above, a basic problem besetting gorilla tourism is that, even when they are located, gorillas remain obscured by forest vegetation. A similar situation arises with Japanese monkeys, who have only limited visibility in the forest environment. Provisioning overcomes this problem by luring the monkeys out of the forest to a clearing where they can be

viewed without the visual obstruction of vegetation (Knight, 2009). In other words, strategically sited provisioning works by denying the animals the opportunity to conceal themselves, thereby allowing people to observe animals in a cover-free environment. Making wildlife viewable means not just *locating* them (i.e. within their range), but also *revealing* them in that location.

## **Conclusion**

The point of departure for this article was the seeming contradiction at the heart of the idea of wildlife viewing. Wild animals are not, as a rule, readily viewable both because of the difficulty of determining their whereabouts and because of their widespread aversion to humans. I have argued that, in order for wildlife viewing to exist on its present-day scale, wildlife has had to be made viewable. This article has identified two ways of doing this—the habituation and attraction strategies—and has described the different degrees of control over animal display that they achieve. Habituation can still struggle to provide the level of certainty required by commercial wildlife viewing. Attraction, in the form of food provisioning, would seem to be rather more effective at ensuring that wild animals become predictably and reliably viewable to visitors.

Both strategies entail human intervention that necessarily changes the “wild” quality of the behavior of the animals on view. More specifically, the pattern of mobility changes in both cases, but to different extents. The pattern of movement of habituated animals is no longer informed by the imperative of human avoidance, as it was in the past. Food-getting mobility is, in principle, unaffected, though habituation may well have subsequent effects on the pattern of foraging, as the reduction of predator avoidance that comes with the neutralization of human predator status potentially makes new feeding grounds available. If, in this way, habituation may be associated with secondary changes to food-getting mobility, provisioning leads to primary changes in the process of food acquisition. In the context of tourism, the strategy of food-attraction tends to bring about a radical simplification of the pattern of food-getting mobility.

Finally, no discussion of habituation and attraction would be complete without pointing out that they are each blunt instruments that have unintended as well as intended consequences. In many cases, habituated or provisioned animals are brought not just within viewing range, but also within nuisance range. Although tourism or recreational observation is made possible, unfortunately human-animal contact does not stop there and may spill over beyond the viewing site to the wider locality, where the animals cause damage

and other problems. The animals might be attractions for tourists and wildlife watchers, but for local residents and farmers they are simply pests. What began as a human invitation to animals to come closer ends up as an animal intrusion into human space. The invitee becomes a trespasser.

That said, this sort of situation—of inadvertently human-assisted animal encroachment—is not necessarily irreversible. Learned animal behavior leading to confrontation can, as it were, be unlearned. But to achieve this, what is required is for humans to behave in such a way as to restore wildlife aversion to humans (what we might call “reverse habituation”) and withdraw human food handouts while regenerating erstwhile feeding grounds in order to restore a (mobility-based) foraging way of life (“reverse provisioning”). In an age when our visual appetite for wildlife has never been greater, there may be good reasons for keeping this appetite in check and acting to make viewable wild animals unviewable again.

## Notes

1. This does not mean that all wildlife everywhere disappears when humans are around. There is considerable species-specific behavioral variation, and some species are much less flighty and human-wary than others. Some animals tolerate an unthreatening human presence at a safe distance, and this may well be associated with an antipredator strategy of early detection that favors clearing over cover (Miller, 2002; Caro, 2005). Some wild animals can therefore be seen in the open, albeit at a distance. This said, the general point remains—that wildlife avoidance of, or flight from, humans remains the norm.

2. This problem of concealment or low detectability of animals is reported in other contexts of recreational wildlife viewing. See, for example, Treves and Brandon (2005), Peace (2005) and Wilson and Wilson (2006).

3. Habituation can also lead to attraction. “In learning to ignore people, habituated wildlife have greater opportunities to find attraction stimuli in human environments” (Whittaker and Knight, 1998, p. 314). When animals lose their wariness of people, the human domain becomes accessible to them in a way it was not before, and the chances of their finding something appealing within it increases. At least the human-averse disposition had the effect of keeping them away from the core human zone, thereby minimizing the chances of frictions with human society. But habituated animals are no longer subject to such inhibitions; human space ceases to be ultra vires. In this situation, animal-initiated—as opposed to human-initiated—attraction may arise. When, for example, wild animals start feeding on human crops, they become a problem.

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