

Chapter 2

Changing Views of the Galapagos

Diego Quiroga

Introduction

Social constructs emerge in specific economic and sociopolitical contexts and are associated with particular groups with concrete interests and histories and under particular regimes (Proctor 1998). As Escobar (1994) has indicated, many of the constructs and categories used to understand the world have been produced in developed countries and are being used and exported to the rest of the world. Escobar talks about the problematization of specific issues and the way in which international bureaucracies use discourses to create professionals and experts that can solve issues such as poverty, malnutrition, and environmental degradation, which have been framed in particular ways. As Escobar and other authors have reminded us, there is an economic system that supports these constructs and perceptions.

In the process of the expansion and conquest of new areas, discourses may encounter alternative and incommensurable framings and definitions. As defined by Elizabeth Povinelli, incommensurability refers to a “state in which undistorted translation cannot be produced between two or more denotational texts” (Povinelli 2001, p. 329). These encounters produce different results that range from the coexistence of two frameworks in relative isolation—in the case of heterodox societies—to the absorption of one framework by the other, as in orthodox societies (Bourdieu 1984). Espeland and Mitchell (1998) have pointed out the ways in which bureaucracies create orthodoxy as they depend on the standardization between disparate things that reduces the relevance of context. This process which is termed commensuration consists of reducing the difference and the generation of consensus.

D. Quiroga (✉)

College of Biological and Environmental Sciences, Universidad San Francisco de Quito,
Quito, Ecuador

e-mail: dquiroga@usfq.edu.ec

Using this theoretical framework, I will illustrate the way in which specific constructs of nature have been generated in the Galapagos at different times and by different groups as they have come to the islands and how these constructs interact to generate new and hybrid understandings. In the Galapagos, several authors (Ospina 2006; Grenier 2007; Quiroga 2009a, b; Hennessy and McCleary 2011) have recently explored the interactions between different groups of people, their specific and concrete activities, and their constructs and models. From this analysis, it is clear that the global conception of the Galapagos is one that views the islands as a perfect place where nature can be studied and key evolutionary processes understood. To a large extent, the basis for this construct is the idea popularized by Charles Darwin and other early scientists that the Galapagos constitutes an ideal natural laboratory.

The history of encounters in the Pacific includes many examples where incommensurable visions have encountered each other. European expansion in the Pacific is filled with these encounters between incommensurable visions (Sahlins 1995; Obeyesekere 1997). One of the best examples is that of the fatal encounter between Captain James Cook and the native people of Hawaii. As described by Marshal Sahlins, there are a series of incongruities between the two theoretical approaches. Similarly, Margaret Jolly and Serge Tcherkezoff (Howes 2011) have described the incommensurability between the concepts of the native people living in the Pacific Islands and the Europeans during the European exploration and conquest of these islands, including misinterpretations of sexual encounters and power relations (Tcherkezoff 2009). In these cases, we can talk about incommensurable world views, as the understanding of nature, spirituality, and the Other was based on ideas and concepts that were fundamentally different (Povinelli 2001). In the case of the Galapagos, the encounter was not between native islanders and the European explorers and scientists but between a later group of European explorers and scientists like Charles Darwin and Robert Fitz Roy, who were to a large extent following a tradition started by previous explorers of the Pacific, like Cook, d'Entrecasteaux, Bougainville, and the Ecuadorian colonists. Although, in many cases, the two groups that encountered each other in the Galapagos were much closer in their perceptions and basic conceptual understandings than those of other part of the Pacific, the differences between the two paradigms were important enough to justify the qualification of being incommensurable.

The Scientific View

The importance of the Galapagos Islands for the development and testing of different, and often contrasting, ideas about the evolution of species emerged early in the nineteenth century with Charles Darwin's visit. The debates and clashes surrounding Darwin's ideas became the foundations for the construction of the islands as a natural laboratory. Later, this construct shaped other visions of the Galapagos, such as those produced by conservationists, the tourism sector, and, increasingly, the conceptual framings of the local residents.

There are several biogeographical reasons why the Galapagos has been considered a natural laboratory for the study of evolution: the distance between the islands and the mainland, which provides some degree of isolation that results in the evolution of the different species, and the age of the islands, for if the islands were much younger, then species would not have had time to diverge, but if they were much older, the species would be so different that they would have been more difficult to recognize as evolving from same species. The fact that there was no early colonization of the islands by pre-Hispanic people explains to some extent why more than 90% of the endemic animals are still there (Valle and Parker 2012). The diversity provided by the currents and the different altitudinal ecological zones makes the Galapagos a particularly interesting place to study evolution. Furthermore, the Galapagos being tropical islands has an unusually rich and dynamic marine environment, the result of a series of oceanic currents that give scientists an opportunity to watch populations adapt to changes in a relatively short time.

Darwin was the first visitor to the islands to develop a concrete and coherent explanation relating geological, geographic, and biological aspects and, thus, initiating the modern science of biogeography and evolutionary biology. Despite the scientific importance of Darwin's visit to the development of his theory, the visit of the *HMS Beagle* to the Galapagos also has elements of a modern secular myth. As has been shown by Sulloway (1982, 1984) and other authors, Darwin's supposedly instant conversion to evolutionism away from creationism in the Galapagos never occurred. This secular myth points to the Galapagos as the place where Darwin had his revelation and his major insights. Thus, in the popular history of evolutionary science, the Galapagos has become a kind of Mecca of evolution, a place where one can observe, as Darwin did, the processes and mechanisms at work (Hennessy and McCleary 2011). Sulloway (1982) has indicated that far from being a specific eureka moment, it was not a single eureka-type discovery based on Darwin's observation of the finches, but rather, it was a long process of analysis and reflection, and it was not the finches but rather the mocking birds that made Darwin consider the possibility of the existence of the transmutation of the species. The biological bases for the differences between the two types of birds lie in the fact that the mocking birds, due to their territoriality and reproductive patterns, are much less likely to move from island to island than the finches, and are represented by four different species, three of which are characteristic to a particular island. The distribution of these birds made it possible for Darwin, who collected three of the four species, to start thinking about the transmutation of species. The distribution of the mocking bird species and the small differences between species living on different islands was one of the facts that Darwin eventually noticed that forced him to raise key questions about the origin of species. The fossils that Darwin saw in South America and the mocking birds he saw in the Galapagos and in Chile, as has been discussed by Durham (2012), created important anomalies that the previous paradigms could not explain. Durham points out that there were two types of anomalies with which Darwin was struggling. One was the affinity anomaly which refers to the similarity between biota of oceanic islands and neighboring continental islands, and the second is the replacement anomaly concerning the way in which similar species appear to succeed

one another in time or take each other's place in nature (Durham 2012). We do know that Darwin begins to question the creationist view during the last part of his almost 5-year trip around the world in the *Beagle* (Sulloway 1984). Influenced by thinkers like Thomas Malthus and Charles Lyell, he develops a gradualist view that sees continuous change as the norm. Once he is back in England, Darwin's observations about the differences between species of birds, such as the finches, and reptiles, such as the tortoises, benefit from the help of leading ornithologists like John Gould and become important elements in the development of the idea of species evolution by natural selection (Sulloway 1982; Durham 2012). These anomalies, which were few but fundamental and that indicated for Darwin the possibility of the transmutation of the species, generated a process that resulted in one of the most important paradigm shifts of modern times. It is this revolution that put Darwin and the Galapagos at the epicenter of the debates and studies that followed the publication of *On the Origin of Species* in 1859.

For Darwin, one of the main lessons for the study of evolution that the Galapagos and other oceanic islands could provide had to do with the distribution of the species and their dispersal. After Darwin, many scientists realized that the Galapagos acted as a living museum where evolutionary patterns could be understood (Quiroga 2009a, b; Hennessy and McCleary 2011). As is well known, however, Darwin's ideas initiated a long debate in the nineteenth century and at the beginning of the twentieth century as many biologists rejected the conclusions that Darwin had reached. One of the most charismatic of these biologists was Louis Agassiz, a Swiss-born Harvard professor, who was a creationist and a catastrophist. He believed that mutations can only create monstrosities and he indicated that "All such facts seem to show that the so-called varieties or breeds, far from indicating the beginning of new types, or the initiating of incipient species, only point out the range of flexibility in types which in their essence are invariable" (Agassiz 1896). For him, the distribution of the species in places like the Galapagos and the Amazon River proved that Darwin was wrong for, Agassiz reasoned, how else could one explain that in similar environments and climates, species could be so different (Agassiz 1896; Winsor 1979; Dexter 1979; Morris 1988). For Agassiz, the Galapagos served as one of the scenarios that he hoped could discredit the ideas of Darwin (Larson 2001). A few years before his death, Agassiz sailed in the *Hassler* to the Galapagos as part of his campaign to discredit Darwinism.

The triumph of Darwinism in the biological sciences has resulted in Darwin becoming an important icon for science and for popular culture. The Darwin secular myth (his travels and his life) has many elements that equate him to a religious figure. As is the case with many mythical religious and secular figures, Darwin's trip on the *Beagle* is a hero's journey, a time of hardship but also of revelation. The modern, secular view of the evolution of life on Earth that now prevails in a large part of the Western population is, in part, the result of Darwin's observations in the Galapagos, as he later admits in his journals. It is based on the idea that Darwinian processes unregulated, random, and undirected generate an order, albeit an imperfect one, by the very nature of their emergent properties. Imperfect complex forms, such as the ones that exist in nature, result from a simple set of key rules, such as the

generation of diversity and the natural selection of the fittest forms. The 5 weeks that Darwin spent and the four islands he visited on the Galapagos were very important in initiating this profound paradigm shift.

For Darwin and for many other evolutionists, the importance of the Galapagos depends to a large extent on its isolation from the mainland. The isolation of the islands from the mainland was not always assumed as a fact, and scientists during the nineteenth century, in particular Baur, have maintained that the islands were at some point connected to the mainland (Baur 1891). Once the idea of the isolation of the islands and the Darwinian paradigm of evolution were widely accepted at the beginning of the twentieth century (Larson 2001), scientists like David Lack and Peter and Rosemary Grant based their studies on the use of the isolation of the islands to understand the evolution of the species (Grant 2008). It is within the theoretical framework of Darwinian evolution and the fact that the islands are of volcanic origin that the Galapagos starts to become famous as a natural laboratory for the study of evolution.

The connection with the Galapagos and the study of evolution does not of course end in the early twentieth century; the relevance of the Galapagos today derives from hundreds of meticulous studies such as the Grants' research on finches, Duncan Porter's work on plant evolution and distribution, Guy Coppo's incredible example of adaptive radiation with the bulimulid land snails, and Gisella Caccone's research on the distribution and evolution of tortoises. As new techniques and methods such as genetic studies, GIS, and mathematical modeling in ever more powerful computers became available, the Galapagos became a referent on this side of the Atlantic (Quiroga 2009b). The Galapagos is one of those remarkable places that provide an ideal scenario where many Darwinian evolutionists can test their ideas. Evolutionists concerned with fitness peaks and valleys can use this scenario to better understand the distribution of genetic characteristics on the different islands. Genetics, statistics, and computer power are now used to test models and ideas in this natural laboratory (Valle and Parker 2012).

Conservationist concerns, as we understand them today, have not always been associated with scientific sensitivities. Concerns about the health of the Galapagos were already expressed by scientists in the nineteenth and early twentieth centuries, but in the early days, these concerns translated mostly into an effort to collect specimens from the Galapagos in order to save them from being lost to science. In 1907, eight young scientists chosen and sent by the California Academy of Sciences (CAS) went to the Galapagos on the 89-foot schooner *Academy*. The expedition led by Rollo Beck spent a year collecting on all the major and minor islands of the Galapagos (James 2010). The fear that the animals would be gone within a few years—a concern that had been expressed before by previous scientist-collectors such as Albert Gunter and Walter Rothschild—motivated the CAS expedition to collect 75,000 biological specimens, more than any expedition to the islands before and since (James 2010). It brought over 260 preserved specimens of giant tortoises as well as numerous specimens of reptiles, birds, mammals, insects, plants, land snails, and fossils (James 2010). These efforts to collect reflect the idea, common at the time, that collecting was the only way of safely preserving and studying the

specimens (James 2010). Huge collections, such as those of the CAS, are in part responsible for the fame of the islands as Darwin's living outdoor laboratory of evolution (James 2010).

In the 1930s and 1940s, a new view of conservation and protection in situ of the fauna and flora of the islands was developed by researchers like Austrian ethologist Irenäus Eibl-Eibesfeldt. Eibl-Eibesfeldt's idea was to conserve the animals living on the islands for future generations. In 1933, German naturalist Victor Von Hagen started to promote his project to commemorate 100 years of the *Beagle* and proposed the creation of a scientific station. His idea was not immediately accepted as there were more grave concerns occupying the politicians and at the time scientists were just starting to accept Darwin's ideas as a universal paradigm (Ospina 2004). Von Hagen was the main proponent of the idea that several of the islands be declared a Fauna Reserve in May 1936. But the Second World War made it impractical to really establish the reserve, and only one guard was assigned to it. As Darwin and Darwinism became the dominant paradigm of the scientific community and as the genetic synthesis fused Mendelian genetics and the Darwinian theory of natural selection, some of the leaders of this new perspective such as Ernst Mayr and Julian Steward pressed for the protection of the islands (Ospina 2004; Hennessy and McCleary 2011). Julian Huxley, a very influential and powerful person in the scientific community, was one of the early proponents of schemes to conserve the Galapagos. As the grandson of Thomas Huxley—a man known as Darwin's bulldog because of his aggressive defense of Darwinism—Julian had a personal and philosophical interest in defending the Galapagos, and he turned the protection of the islands into a personal crusade (Larson 2001). He believed in the evolutionary progress of the human mind from lower to higher forms. He was a prominent supporter of eugenics and the use of science to allow the preferential breeding of the best of humankind (Cairns 2011). In 1946, after the Second World War, he was elected as the first general director of UNESCO, and immediately afterward he persuaded the organization to include conservation to its agenda. He convinced UNESCO that the Galapagos should be a key conservation site in part because of his links to the history of Charles Darwin, and he was a key figure in the declaration of the Galapagos as a national park and the creation of the Charles Darwin Foundation (CDF) (Cairns 2011). In 1954, while president of the Royal Society, Huxley supported the visit to the Galapagos of a mission led by Eibl-Eibesfeldt and American zoologist Robert Bowman due to his concerns about scientists' complaints regarding the possible negative effects that the 2,000 residents might have on the Galapagos (Larson 2001). It was this visit that resulted in the creation of the CDF (Cairns 2011). This scientific vision of the Galapagos started becoming popular in the 1960s with a series of television, magazine, and film productions (Hennessy and McCleary 2011). Because some early proponents of the idea of the Galapagos becoming a conservation sanctuary had strong ecocentric views, some authors have speculated that an eco-fascist vision was guiding these early views of the islands, views proposed mostly by foreigners and outsiders (Orduna 2008) that were very critical of the residents of the Galapagos who they perceived mostly as a threat to the islands' biodiversity. As the Galapagos became better known for being a natural laboratory and a place where

scientists could study and understand evolution, local people were perceived as a disruptive force that needed to be dealt with. Thus, a dominant view was established that conceived of the Galapagos as an ideal natural laboratory, due to their basic geological, geographic, and biological characteristics, and that viewed the local people as a menace to conservation and to the maintenance of the Galapagos and its uniqueness (Quiroga 2009a, b; Hennessy and McCleary 2011).

Starting in the 1970s, a new economic and discursive activity started to flourish in the islands. The influx of tourists to the Galapagos in general, and the growth of tourists staying in accommodations in the towns specifically, played a key role in the creation of the new hybrid discourse and increased commensurability between the value systems. The Galapagos Islands provide a series of physical, biological, and cultural conditions that make them attractive to international visitors. Some of these include the tameness of the fauna, which are easily approached by visitors, the iconic aspects of the islands, the existence of emblematic species, and the increasingly better infrastructure and amenities, such as 24-h electricity, food refrigeration, air conditioning, fast boats, restaurants, and better communications (Grenier 2007; Quiroga et al. 2010). Furthermore, as in many other destinations (Becken 2010), the sense of safety and a favorable climate play an important role in attracting the large number of tourists to visit each year.

From the middle of the twentieth century, conservationists saw tourism as way to protect the biodiversity of the islands (Grenier 2007; Ospina 2001). Businessmen from mainland Ecuador and from developed nations and locals from the Galapagos have used the idea of the islands as a pristine natural laboratory to create a multimillion dollar industry. As has been mentioned by several authors (Ospina 2001; Grenier 2007; Quiroga 2009a, b; Hennessy and McCleary 2011), tourism constitutes the appropriation and commercialization of the global discourse about the Galapagos.

Tourism, especially large tourism operations, shares with the conservation sector much of the discourse of saving nature from extractive activities. Many of the owners and operators of large vessels frequently mention the necessity of protecting the Galapagos from the destructive hands of the local population. From their beginning, large tourism operations were planned and programmed as activities that should serve the conservation effort. In a report from 1957, a UNESCO reconnaissance mission suggested that the Galapagos could become an important asset for the Ecuadorian economy by attracting tourism. The 1966 Snow and Grimwood Report recommended ways in which tourism could be managed by large companies (Cairns 2011). The use of floating hotels was to play a key role in the process (Grenier 2007; Cairns 2011). To a large extent, this so-called floating hotel model, which many now agree has backfired, was based on a perception that the local population was the main problem for the conservation of the islands. This new view of the Galapagos originated from the recognition that the biodiversity that exists in the islands is the main resource to be utilized in a non-extractive and sustainable manner. Thus, the imposition of this agenda and the creation of floating hotels resulted in the consolidation of an alliance between cruise boat tourism, science, and conservation (Grenier 2007; Ospina 2001).

Tourism infrastructure is concentrated in the hands of a few people who often have important connections with the conservation sector and share the same visions

and concerns. Taylor et al. (2006) have indicated that in 2005, foreigners and mainland residents owned most of the top level luxury boats (almost 82% of them), while Galapagos residents owned only 18%. On the other hand, Galapagos residents owned most of the economy class boats (73%). With some notable exceptions, the companies that own and operate the more expensive boats based mostly in Quito and Guayaquil (Taylor et al. 2006; Epler 2007) have traditionally shown little interest in the development of the local towns, as their operations have largely ignored the towns as part of the destination. The discourse produced by many of these operators and agencies emphasizes the Galapagos as a pristine land where people are absent and pristine nature can be observed (Grenier 2007). Pretending that the local people are invisible, as the cruise boat tourism chooses to do, achieves, at least in the plane of representation, what some scientists and conservationists wanted to achieve in practice. An Internet search for pages advertising tours of the Galapagos reveals an emphasis on tame and friendly animals; in most of the pages, there is no mention of the local inhabitants (Grenier 2007).

Although the dominant construct of the Galapagos produced by cruise boat tourism shares many of the basic concepts with the scientific constructs of the islands, it also differs from the scientific perspective in important ways. It is a simplified and domesticated view of Darwinism, as some of the most troubling Darwinian ideas have been packaged for popular consumption. As Ospina has noted, the Darwinian paradigm, which views a constant struggle between organisms for survival and considers diversity and natural selection as the main drivers of evolution, is often transformed by many involved in the tourism sector, such as tour operators, travel agencies, and guides, into a more harmonious view of nature in which tame creatures live in a peaceful manner and can be observed by humans (Ospina 2004, 2006).

The Galapagos as a Frontier and Extractive Economies

The extraction of resources from the Galapagos started early, with tortoises being taken away by pirates and privateers and later by whalers and fur hunters. This idea of the Galapagos as a source of goods to be extracted continued during the time of colonization by Ecuadorians (González et al. 2008). Just a few years after Ecuador was created as a nation in 1830, it declared the islands part of its territory and made an effort to annex them. Before and after Ecuador annexed the Galapagos, several other countries were interested in the islands (among them the UK, the USA, and Chile), wishing either to extract their resources (products such as tortoises, whales, sea lions, guano, orchilla, fish) or to use them as a strategic geopolitical outpost. This idea appealed to and moved not only the young country of Ecuador but also countries such as the USA (Latorre 2001).

The first colonists arrived in the archipelago in the early 1830s, as Ecuador tried to establish control of the land. The first group led by Jose Villacis, a veteran of the wars of Andean independence from the Spaniards, established a colony in Floreana or Charles islands. In 1860, a second colony was established in San Cristobal, and,

eventually, a sugar plantation and sugar mill, a coffee plantation, and cattle farm were constructed. As in the case of Floreana, this colony led by J. M. Cobos was based to a large extent on outlaws and political prisoners, some of whom eventually killed Cobos, who they accused of being their brutal oppressor. A similar pattern occurred in Isabela where cattle farms and plantations were also created. Once these colonies were dissolved, the people who stayed started to control and manage their own farms, or *fincas*. During the 1960s and 1970s, the Ecuadorian public's view of the Galapagos as a frontier—a remote and harsh place, where the land could be tamed through hard labor and the creation of agriculture and cattle farms—was further enhanced. As was the case of the Oriente (Ecuadorian Amazon forest), the Galapagos became a region of agricultural expansion and colonization. The Galapagos was conceived as the land of transformation from wild nature to culture—a land that humans through their labor could domesticate and control. Contrary to the Darwinian evolutionist classification of organisms as either endemic, native, or introduced, the early colonists saw animals as either useful, useless, or pests. Preserving the isolation—a requirement for the maintenance of the natural laboratory that scientists were dreaming of—was exactly what the locals and their economic logic were trying to avoid.

For many Ecuadorian colonists, nature must be conquered and the land *cleaned* (cutting the forest is often referred to as *limpiar el monte*). Areas like the Galapagos and the Amazon were subject to laws passed by developmentalist governments that promoted colonization. The Ecuadorian government needed to expand its frontiers in part as a response to pressure from poor people in the highlands who needed more land. Laws were passed during the twentieth century punishing those who kept the land idle, and conservation was neither a concern nor a priority. Much of this vision still permeates the views and desires of many Ecuadorians living in the rural areas of the Galapagos. Thus, in the case of Isabela, some residents still consider animals such as tortoises as sources of food and the Galapagos hawk as a pest that kills their chickens and needs to be eliminated.

According to this pioneer mentality, the transformation of wild nature into domesticated and productive nature is an act of possession and ownership (Ospina 2001). Many pioneers feel that through their labor and hardwork, they transformed the islands from a harsh and difficult place to one where people could live comfortably. They think of themselves as the ones who made the islands hospitable and that they have undisputable rights over the land and the seas that newcomers do not have. They remind younger residents, especially newcomers, that they created the basic infrastructure, such as the airport in San Cristobal and the roads. They even claim that the legal system that supports much of the environmental policies they dislike was of their making, as some fishermen say occurred with the creation of the Galapagos Marine Reserve (GMR). These early colonists are often called by the term *carapachudos* (from the Spanish word for carapace referring to the Galapagos tortoises) which, as Ospina points out, refers to their rough character and the fact that they can live without food or water and support the hardest conditions (Ospina 2001, p. 30). Unfortunately, they complain that their hard labor is now mostly benefiting others, especially outsiders who are now establishing their businesses on the islands.

The pioneers romanticize the past. It is described as a time when there were no diseases or problems with agricultural pests and when sea animals were plentiful and nature provided all the resources people needed. In the ocean, there were plenty of lobsters and fish; it was enough to go to the shore and collect all the sea animals they wanted or to go to the highlands and hunt the wild pigs and goats. “We used to go down to the shore,” a 67-year-old fisherman told me, “and we would take as many lobsters as we wanted. Since we did not have a refrigerator, we used to take only those we needed, there was no need for any type of controls, and we never overfished.” For them, that was the real Galapagos and that was real conservation. Most of the older people interviewed maintain that there were no environmental problems; those are to be blamed on the conservationists, the industrial fishing boats, and the large tourism companies. There was a high degree of isolation as, until the late 1950s, only one or two boats would come per year. The coming of a boat was an important event not only because it brought goods and letters from distant friends and relatives but also because people in San Cristobal who had not seen each other for several months used it as an opportunity to meet. It was a time of celebration.

The original agricultural sector became less predominant in the second half of the twentieth century as new sectors became leaders. The most important of these sectors was fishing, which started to grow in the 1950s. Colonists, who were originally dedicated to agriculture and lived in the highlands, began to descend to the beach areas and to participate in different fishing activities. Many were fishing for bacalao (*Myctoperca olfax*), which they salted and dried and sent to the mainland to be prepared as a soup to be eaten during Easter celebrations. Other fishermen captured fish, turtles, sharks, and lobsters that they sold to large industrial boats from different countries (especially Japan), which were anchored in San Cristobal’s port. Green and red spiny lobsters fisheries (*Panulirus penicillatus* and *P. gracilis*) which started in the 1960s became major exports in the 1980s (Hearn 2008); most were sold to Guayaquil from where it was exported to the mainland. Lobster fishermen introduced the hookah system which consists of a compressor that provides air to a diver (Castrejón 2006). As Southeast Asian economies improved, there was increased demand for sea cucumbers (*Isostichopus fuscus*), and an emergent fishing industry was created in a short period of time during the early 1990s. The Galapagos National Park (GNP) tried to control the fishing industry in the middle of that decade, but that resulted in tensions and conflicts (Hearn 2008) (Castrejón 2006). Between 1995 and 2005, several strikes and conflicts paralyzed the GNP, creating instability and mismanagement (Hearn 2008; Quiroga 2009a, b). During this time, the extractive versus conservationist discourses and visions clashed constantly and became more polarized. The polarization made it clear that the conflict was not only between two economic conditions but also between two divergent and incommensurable cosmologies and valuations of nature.

Due to the increasing amounts of money that the Galapagos fisheries brought to local communities, the number of registered and active fishermen in the Galapagos increased from 752 in 1999 to 1,229 in 2000. More recently, however, due to the collapse of the main fisheries, the number of active fishermen decreased to 436 by

2007 (Castrejón 2006; Quiroga 2011), representing roughly 2% of the total population. The reduction of resources in the marine reserve, particularly sea cucumbers, demersal fish such as groupers, and lobster (although the latter has recovered in recent years), explains this decrease. Many fishermen have transitioned to more profitable sectors, such as tourism. Currently, the GMR consists of approximately 450 active and registered fishermen (Quiroga 2009a, b). By 2006, fishing made up less than 4% of local income (Watkins and Cruz 2007).

For many fishermen, the creation of the GMR in 1998 meant alienation and restrictions (Quiroga 2009a, b). Some fishermen feel that although they were the main promoters of the GMR, the reserve's regulations have in many ways benefited other people, primarily the owners of the large tourism boats and the conservationists working for international NGOs. Many fishermen feel that their voices have not been heard and that numerous management decisions regarding the GMR have been influenced mostly by foreign or continental tour operators. As we have seen, in the last decade, the economic importance of fisheries for the Galapagos economy has diminished in a significant way. Whereas in 2003, fisheries represented a total income of seven million dollars to the local economy, by 2006, it accounted for only 2.5 million mainly due to the collapse of the sea cucumber fisheries (Hearn 2006; Quiroga 2011). After economic downturn in the sea cucumber and lobster fishing industries, many in the sector started looking for alternatives in order to survive. Increasingly, they began to propose alternatives that will result in their greater involvement in tourism.

Although the level of conflict diminished significantly after 2004, there is still much animosity between fishermen and conservationists. Fishermen from Santa Cruz and San Cristobal often complain about the amount of money conservationists make as they sell the idea of saving the islands and their creatures. They feel that the islands' endemics, in particular Lonesome George and other tortoises, have been used by the conservationists to gain funds and increase their salaries. They complain that money was spent on removing the tortoises during major volcanic eruptions. When we get sick, nobody cares, say the inhabitants of Isabela, but when a natural event such as a volcanic eruption threatens the tortoises, they are removed by helicopters (see also Ospina 2006 for similar statements). Even as recently as May 2012, in an interview on local radio, Eduardo Veliz, a popular and controversial politician who used to represent the islands in the National Congress, complained that when the electric plant in San Cristobal failed, a young child had to undergo surgery using a physician's cell phone as a makeshift lamp, whereas there is an international outcry each time Lonesome George farts. For many of the local inhabitants and politicians, the local people and the fishermen have been criminalized and blamed for all the perils of the islands, many of which are the result of the mistaken policies of conservationists and the tourism industry (Quiroga 2009a, b).

In his thesis, Pablo Ospina (2004) reproduces some comments that the local people have made to him with respect to some of the local species, illustrating the existence of a discourse against conservation and conservationism. For example, when several sea lions were killed in 2003—a killing that many conservationists blamed on one or several fishermen—fishermen counterattacked, saying that the

killing was caused by the conservationists to create a need for their presence. I have heard similar accusations that show that the local people mistrust the conservationists and believe they are to be blamed for the destruction of natural capital. Similarly, in interviews that we conducted and similar ones conducted by Burbano (2011), one can see the anger fishermen feel against some of the emblematic animals that are most dear to conservationists, such as sharks, sea lions, and tortoises. This anger derives not only from practical considerations, such as the fact that sea lions and sharks eat the fish that fishermen catch, sink their boats, and—according to many fishermen—due to their overabundance, decrease the availability of fish in the ocean, but also from the fact that these animals are associated with tourism and conservation. The fact that these stories are still being told in the Galapagos shows that there is still a big gap between the two incommensurable ways of valuing and understanding nature and animals. With a more utilitarian vision that values the direct use of resources, the locals residents value animals based on a very pragmatic scheme, while the scientific system derives from Darwinian and conservationists constructs which are distant and still ungraspable by sectors of the local population. The differences between fishing and conservation illustrate the gaps that exist in other areas of society like agriculture, construction, and other economic activities; these other areas often reproduce the same anticonservationist discourses, as they feel that the excessive controls imposed on them by the GNP and the NGOs are not helping nature but the interests of special groups.

The differences between the two visions were heightened when the dominant conservation and scientific views of the island were operationalized in a series of legal and management schemes. The creation of the protected terrestrial and marine areas in the second half of the twentieth century polarized the two perspectives and accentuated the divisions. The criminalization of many activities that were considered a threat to biodiversity conservation, such as fishing practices and types of gear, of agricultural production techniques, and of construction materials like cutting native woods, was also a process of imposing the scientific evolutionary paradigm of valuing nature, at the expense of the local view. During the 1990s and the early 2000s, when the two groups and their visions were very polarized, commensurability seemed to be a distant possibility, and the most people thought possible was a peaceful coexistence of the groups holding increasingly divergent views.

A Hybrid Discourse, Land-Based Tourism

The process of expanding paradigms and visions often involves the homogenization of differences and the accommodation of different and diverse interests into unified narrative schemes. This process is often the result of negotiations between actors who control different resources and have different powers. Furthermore, as in the case of the Galapagos, this process is not a one-sided elimination of alternative views but rather the assimilation and accommodation of disparate value systems into new hybrid cosmologies. It also often involves economic transformations and

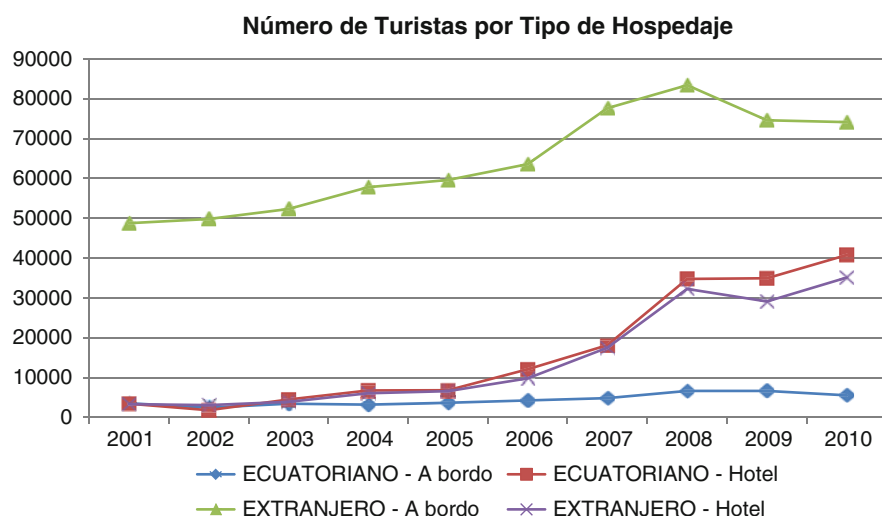


Fig. 2.1 Number of tourists per type of accommodation in the Galapagos Islands (Mena 2011)

changes in the material conditions of the different groups. As such, it involves new adaptations to novel ecological, economic, and demographic realities.

Besides the floating hotel operation, another type of tourism has grown in importance during the last three decades. Starting in the 1980s, tourism has been staying increasingly in the towns and using the services of the local population. This type of land-based tourism has become a major part of the economy in all of the islands (Epler 2007) and has been growing in a big way to the point that now almost the same number of visitors goes to hotels and residencies on land and stays on the large cruises. Many of the hotels and residencies are owned by Galapagos residents (Epler 2007). Tourists then travel from island to island on speed boats owned by the local residents and organize daily visits to places close to the ports, often on boats owned and/or operated by fishermen. This type of tourism is attracting mostly local young international tourists and national tourists (tourists from mainland Ecuador), as can be seen in Fig. 2.1 (Mena 2011).

National (Ecuadorian) tourism has increased in recent years and has become a major source of revenue for the local population. It might become as important as international tourism in the near future [see Fig. 2.2 (Mena 2011)].

As they try to increase land-based tourism and reduce the number of tourists staying on cruise boats, local tour agencies, local residents in general, and politicians challenge the dominant discourse and management practices that have been imposed by the conservationists and part of the tourism sector. Local residents and politicians claim that there has to be a change in the exclusive floating hotel model which has been dominant in the past. As I mentioned in a previous article (Quiroga 2009a, b), local people often perceive that there are three sectors: tourism, conservation, and science with the aid of the national government that are seeking to shape and manage the islands for their own benefit, often without considering the needs of the local

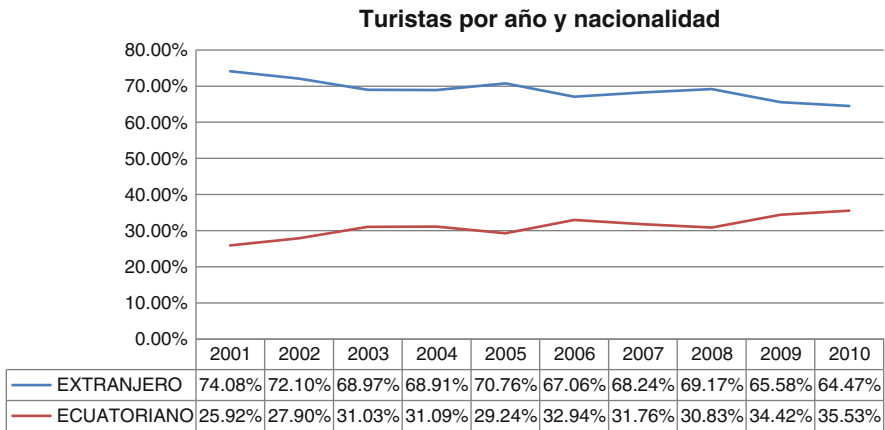


Fig. 2.2 Tourist per year and origin of tourist in the Galapagos Islands

residents. As a response, a new advertising strategy now emphasizes new types of tour packages with homestays and activities based in the towns. A new view, backed in part by some conservationists, is now promoting ecotourism packages. This new strategy is based on new types of activities such as day tours, adventure tourism, *pesca vivencial* (artisanal experiential fishing), catch-and-release sport fishing, kayaking, diving, biking, and sport events like marathons and triathlons, as the types of tourism they feel that will bring real benefit to the communities. There is also an emphasis on defining ecotourism as a type of tourism that benefits not only the environment but also the local population. Local authorities, such as the governor and the mayors, as well as local opinion leaders like radio and TV announcers and businessmen, are trying to promote their towns as tourism destinations, improving boardwalks and building new docks for tourists as part of an effort to attract tourists to their towns. Many young foreign travelers and visitors, including backpackers and large groups of college and high school students and young volunteers, are now staying in the towns. Many homes are offering homestays, and some have even started to build extra rooms to satisfy the growing need for local accommodations.

Besides this type of town-based international tourism, the accelerated growth of national tourism in the last decade has had important implications for the island. Changes in the national economy, such as an increase in oil income, dollarization, and a general increase in the GNP per capita, have meant that the Galapagos is no longer, as it used to be, a destination that only the wealthy and upper classes of the country can afford. Now many, more Ecuadorians from the growing middle class are traveling to the Galapagos on vacation. This new type of tourism uses more of the local facilities, and although Ecuadorian tourists spend less in general than international tourists, more of their money stays within the communities (Taylor et al. 2006; Epler 2007). In an important way, this affects the labor market in the Galapagos as more people are now depending on tourism as their main source of income. Epler (2007) notes that tourism now accounts for more than 50% of the economic activities in the Galapagos, while fishing is only 3%. This new economic reality also manifests

itself in the structure of peoples' values, ideas, emotions, and perceptions. Thus, from this new economic reality which includes the collapse of the fisheries and the increasing importance of tourism for the global population, a new discourse is emerging: one that sees the need to conserve the islands' resources but considers that these efforts cannot benefit only outsiders who do not reside in the islands. Many local people no longer see tourism as a foreign and negative force, but rather as something that they need to know how to participate in and from which they can benefit. The original frontier mentality based on extractive industries, fishing, and agriculture is now adapting to this new reality and developing new types of hybrid understandings and sensitivities.

A New and Emergent Hybrid Culture?

The Mexican author Nestor Garcia Canlini (2001) noted that social scientists have often overlooked the complexities associated with the production of new cultures, failing to examine the manner in which different discourses generate conflict and opposition as well as how negotiation and accommodation generate shared views or hybridizations and, possibly, commensurable visions. As we have seen above, historically two incommensurable discourses dominated the way visitors and residents perceived the Galapagos: a scientific-conservationist globalized view and a local frontier and utilitarian mentality (Quiroga 2009a, b). During the last part of the twentieth century, these two views became more polarized, and conflicts emerged mainly as the result of the fight between fishermen and conservationists. With the creation of the Charles Darwin Foundation and the GNP, institutional support was generated for the conservationist discourse. As experts and professionals entered the scene, conservation was problematized, and a discourse was produced about the need to protect the Galapagos, in particular from the local population, for the rest of humanity. UNESCO played an important role in establishing the discourse. The global position has been effectively imposed over the local view classifying the local activities as more or less adequate and criminalizing many of the behaviors of the local residents and producing a value system in agreement with the Darwinian paradigm. For a period of time, that meant that the two systems coexisted in heterodoxy, without much dialog between them.

During the last part of the twentieth century, a new hybrid discourse was created based on the traditional framework of the local residents and the assimilation of many conceptual schemes and sensitivities from the discourse of conservationist and tourism operators and the conservationists, changing their strategies to include the local people in their conservation agenda. This new discourse was composed of many bridging concepts that were developed as each of the systems adapted and accommodated to the others and each of the views assimilated aspects of the others in a process of negotiation between different actors. In general, one can say that the local system having had less access to resources had to incorporate more elements from the global view of the islands. As we have also noticed, economic transformations

caused especially by the increase in the number of tourists staying on land have played a key role in the cultural transformations that are occurring in the islands.

During the 1990s, especially during the late 1990s, the Charles Darwin Foundation started to incorporate some of the new social reality as part of its discourse to include the local population in the planning and execution of different conservation programs. During the late 1980s and especially the 1990s, some of the key producers of the traditional discourse of conservation, which negated the role of the local people such as the Charles Darwin Foundation and other NGOs, saw a need to change their strategy and started to talk about education and incorporating views and perspectives of the local population. The new conservationist model needed now to include the existence of a local population which could no longer be ignored. As conservation is being reframed as a social problem needing social science expertise, new professionals and organizations have begun to enter the scene. Educational and public awareness campaigns, as well as a changing economic reality, are now transforming the traditional local framework.

In general, most of the population has assimilated many of the constructs and sensibilities of the global environmental discourse to different degrees and with various levels of sincerity. There are, however, still important sectors that maintain a more traditional framework. Many of these more traditional constructs of nature that reflect, to a large degree, the frontier mentality discussed above can be found in the rural areas and among the fishermen and the agriculturalists. In a survey conducted in 2009, we interviewed 210 residents in San Cristobal about the position of the people with respect to sea lions. It became clear that the community is divided with respect to the value of these animals. For 66% of those associated with the fishing sector, sea lions are more a menace and constitute a problem when they are trying to do their jobs. However, for most of the residents interviewed, the animals represent a symbol of their town and are viewed as important because they attract tourists; thus, most people in San Cristobal perceived the animals in a positive way. A large number of residents—69% in the community in general and 66% of those involved in tourism—believe that the sea lions are cute and fun, whereas only 28% of the fishermen felt that way. Sea lions in the Galapagos are viewed as part of the Galapagos ecological identity and also as an economic counter force to local fisheries. These alternative perspectives represent the complexities of accommodating multiple visions in the Galapagos. Galapagos residents seem to be living a moment of transition where a new understanding is emerging from the polarized past. This new hybrid view takes important elements from the traditional science, conservation, and tourism discourse while maintaining the idea that the local residents have a right to use the rich natural resources of the islands and to shape and be shaped by the social–ecological interactions that define the Galapagos.

From this and other similar interviews, we can conclude that for some sectors of society, changes in the way people value their resources occur slowly and, in the case of some sectors, like agriculture and parts of the fishing sector, it has affected them little. Thus, often the value system and the sensitivities of fishermen who are now working on tourism are, to a large extent, the same as they were before they changed their activities. When they feel that the GNP is trying to stop them from

profiting from tourism, they still mention as a threat that if they are not allowed to profit from tourism, they will go back to shark finning.

For most of the population, however, a new type of environmentalism is emerging, one that is closer to what Martínez Alier (2007) has termed popular environmentalism, an environmentalism that is based on the preservation of natural places and biodiversity not for its own sake but for the benefit of the people, especially poor people, living next to these resources. A series of anecdotes and stories illustrate the change in strategy and practice. As we were going with a group of students to Kicker Rock on a day trip, the captain of the boat in Isabela told me how fishermen on that island are now more interested in taking tourists snorkeling than in going fishing and are buying live animals from other fishermen, such as sea horses and octopus, and taking them to places where they later will take the tourists. A dive master who used to be a fisherman told me with sadness how he used to kill sharks, but now that he is diving with tourists, he sees how beautiful they are under the water. Another fisherman who used to kill sharks admitted that he has now stopped doing so because his kids complained each time he arrived home with shark fins. This new hybrid discourse is thus starting to question some of the old dichotomies between the global and the local and conservationism versus extraction.

Both governmental and nongovernmental organizations such as the Araucaria Project (Spanish cooperation), the Charles Darwin Foundation and the World Wildlife Fund as well as private companies like SCUBA Iguana have trained fishermen to become diving guides. Although many of these efforts have not been successful (for few of them are actually working as SCUBA diving guides), some have converted to working in tourism, and there are now some fishermen who get most of their income from tourism and guiding. Also the fishermen and other local residents have produced different projects involving a change to, what they argue, more sustainable activities. Probably one of the most controversial is that of *pesca vivencial*. The basic concept is that fishermen take tourists with them for a day of fishing in the traditional way. The justification is that in this way, they will be decreasing their fishing efforts, thus, the extraction of resources. The idea was originally proposed by fishermen like Carlos Ricaurte of San Cristobal. NGOs and the GNP have supported the efforts of several fishermen. At the moment, according to the GNP web page, there are 24 boats belonging to Galapagos fishermen who have a permit to do *pesca vivencial*. For some fishermen, *pesca vivencial* is not a viable alternative, and they have proposed instead to do sport fishing catch and release, for they argue that sport fishing that targets large fish such as bill fish will attract more international attention. This strategy is something that the GNP and the CDF have questioned, and they have said that they oppose the idea of sport fishing as a tourism alternative in the Galapagos. The popularity of these new and often controversial ideas does not necessarily mean that the fishermen have shifted completely to a new value structure; rather, one must see them as making a strategic move as they try to access new types of resources and learn how to negotiate within the spaces left open by the dominant discourses and practices.

Since 2004, the tensions between fishermen and conservationists started to decrease as a result of several events, such as the diminished importance of fishing

for the Galapagos economy; the increased interest in tourism by many permanent residents, including fishermen; changes at the national level as some political parties disappeared from the scene; and a change in conservationist discourses and practices toward becoming more aware of the need to include local people in their strategies. Conservationists started to perceive local inhabitants as a necessary part of their strategy to save the islands. The facts that fishermen now perceive that their income might be threatened by problems encountered by some of the major fisheries have meant that for many of them, tourism is the only realistic alternative. This new situation has become an important factor in shaping the attitudes of fishermen, especially the young ones, vis-a-vis tourism, and conservation. In her interviews with fishermen for her MA thesis, Diana Burbano documented not only the fact that many fishermen already have started to get involved in tourism but also that many of the young (49%) and the middle-aged (35%) fishermen would like to see tourism rather than fishing as their main activity because they make more money from it and it is less demanding (Burbano 2011). As new practices and economic systems emerge, such as sport fishing, day tours, SCUBA diving, surfing, and kayaking, the gap between the global and the local discourse has narrowed. This new emergent conceptual system builds on the rejection of the traditional conservation and tourism models, which many local people consider have failed in protecting the islands' resources and improving the well-being of the people, while at the same time, it appropriates some key concepts and symbols from scientific and conservationist cosmology, like the importance of conserving endemic and native animals and plants. No longer can we say that most of the population of the Galapagos perceives conservation as a dominant and external strategy; rather, there is now a sense that much of their well-being depends on their successful management of natural resources.

Tourism, which is now the main economic engine in all of the islands, has had a tremendous influence on the economy and on people's livelihoods. In Isabela, there are now some 20 fishermen who work at the dock doing bay tours and taking tourists to visit the *poza de las tintoreras*, the other side of the bay. Most of them have practically stopped fishing. These fishermen have invested in improving the level of comfort of their fiber glass fishing boats to accommodate the tourists. As is also the case in San Cristobal, most want to dedicate more resources and time to tourism, which they feel is less demanding and more profitable. Several claim that the number of people doing shark finning has decreased significantly because they now have an alternative, but they threaten to go back to their original activity if the park is going to regulate their activities. Similar processes are occurring in all the islands as fishermen are working on different boats as captains and sailors. In other words, most fishermen are very pragmatic about their greater acceptance of the conservation perspective. They feel that as long as it is convenient for them to conserve, they will do so, but once that is not the case, they will go back to their old practices.

Most of the local residents are now in agreement with the general principles of conservation, as can be seen from the results of Instituto Nacional de Estadística y Censos (INEC). When asked if the resources must be conserved in the long run, 75.1% of the population of the Galapagos answered yes. However, it is fair to say that it is among the younger population where the change is more evident. In many

of the workshops and classes that I have conducted with high school students and local college students in San Cristobal, it is clear that many of the younger people have a much more sincere commitment to the principles of conservation. Many in this age group (between 15 and 22 years old) feel that conservation is an imperative and they have a real responsibility for the natural world. Words like climate change, sustainable energy, and waste recycling are now becoming part of young peoples' everyday discourse. They often complain about the attitudes of their elders, who they feel do not understand the importance of resource conservation. This generation gap that has been created is partly the result of education campaigns that NGOs, the GNP, municipalities, and universities have been promoting.

This change in attitudes is in part due to the resources available to conservationists to spread their message. There are now numerous programs to increase the awareness of the local population about conservation. The GNP has a radio and TV program which talks about the achievements of the park; the Charles Darwin Research Station has different educational initiatives and centers to run campaigns. Universities like the Universidad San Francisco de Quito (USFQ) and Universidad Central have also created majors such as natural resource management and ecotourism for the local population that include the teaching of conservation and evolution.

This new hybrid culture, rather than rejecting science and conservation, demands that scientists ask new types of questions. Quiroga and Ospina (2009) conducted a series of interviews regarding the acceptance of science among the local people. We found that 84.2% of the population thought that more scientific research was needed. Also, a large portion of the local people—when asked about the role science must play—said that science should be involved in studying the impacts of migration, in public health, and in the impacts of tourism (Quiroga and Ospina 2009). From this survey, we can say that a large section of the people of the Galapagos now views science as a potentially beneficial institution, but considering that rather than emphasizing the study of evolution and other traditional biological and geological issues, science must be directed to solve the problems and issues that affect people.

Even the most cherished symbols of science are being integrated into new hybrid constructs. Darwin's name and image are now used by the local population in many and often creative ways. His image has been shaped and transformed according to the needs and perspectives of the local population. The large towns now have streets and plazas named after him, and several public places and buildings carry his name. This is the case in San Cristobal, where the municipality has named the newly remodeled conference center the Charles Darwin Convention Center and has placed a bust of Charles Darwin on the boardwalk and his statue in Tijeretas, the place where he first landed in 1835. Despite the growing presence of religious groups, such as different Catholic groups, Jehovah's Witnesses, Mormons, and Seventh Day Adventists, among the residents, the image of Darwin has been accepted, appropriated, and used by the local population. In the same way that nature has been stripped of its most brutal and discomfoting aspects in its presentation for tourists, so have Darwin and Darwinism been stripped of their most secular and bothersome interpretations by the residents of the Galapagos. Darwin's image is, thus, no longer just the icon of the

international scientific community and the global conservationist discourse but also, in a transformed and adapted manner, an icon for the local population.

Isolation or Connectivity: The Framing of a New Problem

As the discourse that the main conservation problem of the Galapagos is the fight between extractive and non-extractive activities loses its relevance, other forms of problematizing conservation are regaining more importance. Isolation has been seen as a key concern for scientists and environmentalists since the middle of the twentieth century. Both biophysical and socioeconomic factors have affected the high degree of isolation which characterizes the islands. Grenier (2012) has described the socioeconomic threat as the continentalization of the islands (i.e., the islands becoming more like the mainland). As he has indicated, there are both national (Ecuadorian) and international factors that have influenced the pace and degree of the connectivity between the islands and the mainland and between islands. These factors, which include the oil boom that the country experienced in the 1970s, the dollarization of the economy, and the international demand for products such as sea cucumber, shark fins, and lobster, have all steadily increased the connectivity of the islands with the mainland. He has also noted how the degree of connectivity has continue to increase, despite the efforts of the 1998 Special Law and the creation of the Galapagos Marine Reserve to curb the increase in connectivity by applying strategies such as limiting immigration, industrial development, and the expansion of the fisheries.

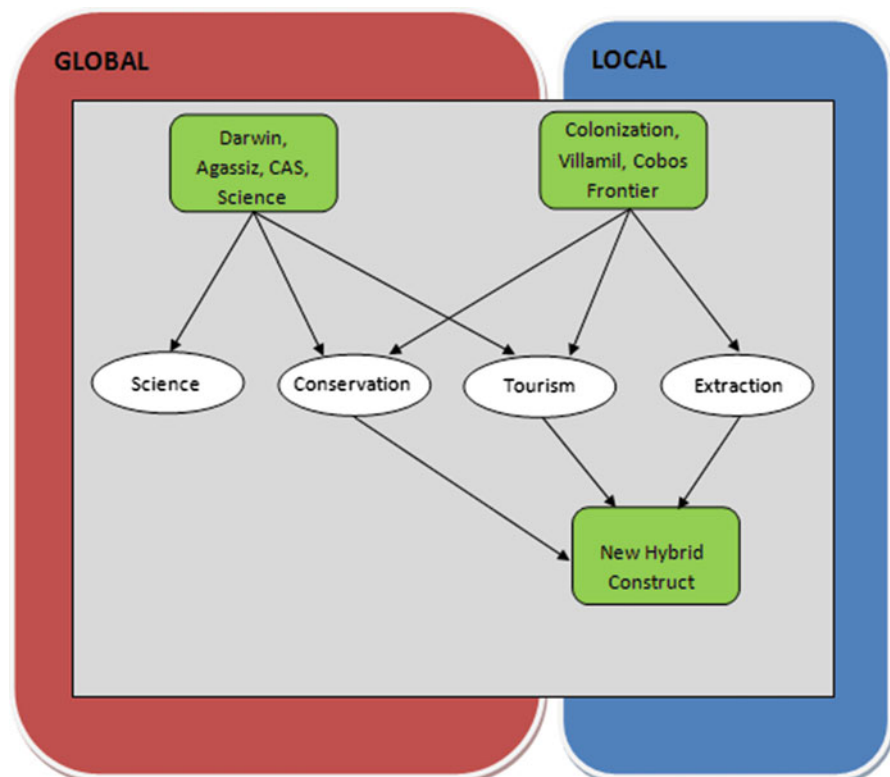
Tourism, migration, and the increased importation of goods are seen as some of the most important threats to isolation. Increased connectivity threatens the natural laboratory, as it can cause changes to habitats, it threatens animals and plants directly with invasives and can result in the mixing of species that have developed in isolation. Some people think that the fight has already been lost. A very controversial article by a scientist (Gardener 2011) suggests that it is time to learn how to live with invasive species. Questioning the duality between isolation and connectivity, the argument is a direct criticism of all the multimillion dollar eradication campaigns, many of which have not worked. With new discourse about the loss of isolation, there are increasing debates about the best way to manage invasives and population growth and to increase the number of tourists. All of these are part of problematizing the Galapagos by NGOs, scientists, journalists, and government officials. This problematization has underscored many incompatibilities between the global and local discourses.

As in the case of the previous discourse against the extraction of natural resources, local people are starting to respond to the idea of the need for greater isolation and less consumption. The way local discourses have been dealing with this new problem is through the concept of *tranquilidad*. The anthropologist Pablo

Ospina has noticed the central cultural importance of this concept for the local culture (Ospina 2006). People in San Cristobal complain about the fast pace of life in Santa Cruz and the way in which consumerism has come to dominate the island mentality. The elders often talk about the past as an ideal time when the stress and tensions of modern life were not as pervasive as they are today. A rejection of the speeding up of the pace of life is now seen by some locals as an important base for maintaining a more sustainable relationship with nature and others. This rejection is, as I was told by some of my local students a life choice, *una opcion de vida*, a more sustainable alternative, which they feel needs to be valued by all. Many of the inhabitants of San Cristobal, at least at the level of discourse, have rejected consumerism and modernity. This idealized version of Galapagueno culture and values contrasts with the increasing number of cars, scooters, air conditioners, household appliances, computers, and other amenities that are finding their way to the islands. In reality, the gap is growing again between the local and the global discourses. This time, it is between a view that sees the value of the islands as a natural laboratory and the residents' view of the islands as a place where they can make a comfortable living. As the population increases and becomes more affluent, there are now concerns about the increased consumption of people living in the islands.

The standard of living in the Galapagos is relatively high compared to the rest of the country. The dream some local people have of the Galapagos as an isolated and tranquil place contrasts with an ever-increasing degree of continentalization driven by an even more powerful desire to be connected to the mainland. The increased number of tourists is also associated with more frequent flights from the mainland. Rising numbers of ships coming from the mainland with cargo and increases in the access to goods and services are part of the new Galapagos. At the moment, there are 12 commercial flights arriving in San Cristobal each week and 31 arriving in Santa Cruz (Freddy Valenzuela, San Cristobal Airport, personal communication). The number of goods brought from the mainland is also increasing. Most of the residents have many home appliances. According to INEC, in 2009, 93.9% of the families had color TVs, 92.5% had cellular phones, 44.3% had a computer, and 30.3% had access to cable TV (INEC-CGRE Encuesta de Condiciones de Vida 2009). This demonstrates not only the need for products and goods coming from the outside but also how well connected the local population is to the rest of the country. This trend for greater connectivity is also seen in the case of the desire of the local population for more and easier means of transporting people and goods from the mainland and between islands. Thus, according to INEC, 83.1% of the people would like the number of flights to and from the mainland to increase, 67.3% would like to see more air transportation between islands, and 64.6% would like marine transportation with the mainland to increase. In 2012, when the government tried to better regulate marine transportation and forbid some boats from coming to the islands as they did not comply with the conditions established by the GNP, the local population complained bitterly about the lack of access to imported goods. They also

responded positively to having more land-based tourism (63.3%), much higher than the number who would like to see cruise boat tourism increase (43.3%) (INEC-CGRE Encuesta de Condiciones de Vida 2009).



Conclusion

The Galapagos' status as a natural laboratory, the conservation problems facing the islands, and possible solutions have been defined and framed to a large extent by international bureaucracies, NGOs, and Ecuador's national government. This global view has been confronted and challenged by local definitions which were the result of the process of colonization and the opening of a frontier by different groups of Ecuadorian pioneers. As we have seen, in a series of transformations, views about the islands have shifted from being divergent and incommensurable to becoming hybrid products of negotiations and impositions. However, as solutions to the old conflicts are discovered, new ones arise that must find a negotiated consensus.

Charles Darwin, who was to a large extent responsible for the greatest paradigm shift in biology, also played a critical role in shaping the vision and understanding the

world has of the Galapagos. As he visited the Galapagos and later thought and wrote about his discoveries on the islands, he established their importance as a natural laboratory and defined a place that could act to solve future scientific debates that blossomed from his theory. This idea, which is based on several biogeographical characteristics of the islands, motivated a series of expeditions, visits, and studies by renowned scientists, many of whom wanted to question or revise Darwin's original observations and conclusions. In the twentieth century, a marriage was created between conservation and evolutionary science in the Galapagos and other parts of the world, which has been so successful that today we have come to think of this relationship as a natural association. Based on the global scientific-conservation vision of the Galapagos comes the idea explored and utilized by the floating hotel tourism sector that marketed the idea of the Galapagos as a pristine natural paradise.

A few years before Darwin arrived, Ecuador had claimed possession of the islands and had sent groups of colonists to assure control of the territory. These pioneers transformed the Galapagos and reproduced distant settings from which natural resources could be extracted, a process and a view that are incommensurable with the scientific construct of the Galapagos Archipelago. The view of the Galapagos as a frontier necessitated that it be conquered, subdued, civilized, and domesticated, a subjugation of nature played out against a constant struggle for supremacy. As these colonists shaped the Galapagos according to their own perceptions, needs, and expectations, they threatened the isolation required by many of the key biological process that fed the scientists and their paradigm. As one can expect, conflicts between the sectors were inevitable, and violent clashes between the groups erupted as the diverse interests and discourses met.

Although one can say that the two views are separated by a wide conceptual and economic gap, among some sectors, the distance between these diverse and opposing views has slowly become narrower as both conservationists and scientists now consider it impossible to conserve the islands without the support of local people. Local people are starting to realize that if they are to benefit from the natural resources of the islands, they need to use long-term conservation strategies. A new hybrid view has developed by which elements of the different discourses are mixed, creating new mosaic visions. There has also been an important change in the way conservationists face social issues. Since the last part of the twentieth century, they have incorporated local people in most of their strategies and have included social scientists and professionals. Thus, incommensurable views and perspectives are finding bridges and points of encounter, the result of constant negotiations that seem to narrow the gap between the two original perspectives. Tourism and ecotourism and the growing access to material and cultural resources that this industry brings are one of these points of contact between the otherwise divergent perspectives. It is a vital issue for the Galapagos how these different visions and sensibilities will transform and shape each other in the future. The extractive activities are no longer seen as the major challenge for the islands; the new challenge is now problematized as the increasing degrees of connectivity and continentalization of the local population. As this challenge becomes more relevant, new solutions must emerge and be negotiated.

Interviews were conducted in San Cristobal with 12 fishermen and in Isabela with four fishermen. I also interviewed local students from the university and participated in a workshop organized by the Charles Darwin Research Station in Isabela. Interviews in the highlands of San Cristobal were also conducted, and class discussions and conversations with local students at GAIAS and workshops with high school students were held about the environment, science, and climate change. Lastly, discussions and meetings with authorities and other leaders were also held to create this contemporary view of the Galapagos.

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