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Humboldt's *Personal Narrative*: A Relation Historic to Literary Journalism

Raleigh James Darnell
Sul Ross State University, United States

Abstract: Alexander von Humboldt, 1769–1859, scientific explorer of the eighteenth and nineteenth centuries, wrote with a rational mind as well as a romantic spirit. Humboldt's *Personal Narrative of a Journey to the Equinoctial Regions of the New Continent during the Years 1799–1804* is a blend of the objective/rational and subjective/romantic, so much so that this work can be considered an early form of science writing in the tradition of literary journalism. *Personal Narrative* reveals that Humboldt drew on and combined his empirical, rational, and romantic backgrounds to inform and inspire the public and his fellow researchers. The strongest case for Humboldt's work being considered an early form of literary journalism is his consistent use of the picturesque, of which his particular use in *Personal Narrative* operates at the crossroads between an Age of Reason and Romanticism. In so doing, Humboldt uses the picturesque to entertain as well as inform his audience. Analyses looking for only objectivity, or only subjectivity, in Humboldt's work fall short because he actively uses both in his writing. His scientific philosophy and epistemology create a dynamic feedback loop between objectivity and subjectivity. Further analysis of Humboldt's work as a literary journalistic piece will shed more light on the methodological holism of his epistemology. Recognizing *Personal Narrative* as an early form of literary journalism opens the door to the works of other authors who were inspired by Humboldt's work to write in ways that could also be considered forms of literary journalism.

Keywords: Alexander von Humboldt – literary journalism – picturesque – geography – science communications

Alexander von Humboldt's multi-volume *Personal Narrative of a Journey to the Equinoctial Regions of the New Continent during the Years 1799–1804* was first published in 1814 through 1825,¹ informed, and inspired the early nineteenth-century public in support of the sciences, much like modern literary journalists who wish to promote the sciences. Communicating accurate scientific material to the public is necessary to counter misinformation on topics ranging from pandemics to environmental issues. Humboldt sought to establish a holistic geography—combining diverse fields of knowledge to produce large-canvas understandings of the world—as a way of research and thought that would lead the future of scientific inquiry and public thought. In his introduction to *Personal Narrative*, he notes “preferring the connection of facts, which have long been observed, to the knowledge of insulated [singular] facts, although they were new, . . .”² In making connections between facts, one could find insight, not just new facts, but the understanding of systems. Laura Dassow Walls identifies Humboldt's methodology as “empirical holism,” where “the parts, not the whole, are antecedent, and the only way to know the whole is through them.”³ When connected, the individual facts allow people to glimpse the big picture and see beyond their own narrow fields. Humboldt recognized a process of knowing that involved the interaction of the arts and sciences, Romanticism (subjectivity) and Rationalism (objectivity). Humboldt also identified his work generally as “physical *geography*,”⁴ and himself as a “geographer.”⁵ Humboldt's *Personal Narrative* is an early model for a literary journalism where science represents a major theme of subject matters, allowing the arts and sciences to reinforce one another, as opposed to dividing into separate camps. Literary journalism is still developing as a genre and, as John C. Hartsock reports, “Much excavation of the subject remains to be done.”⁶ By bringing Humboldt's work under the literary journalistic lens—focusing primarily on Humboldt's use of the picturesque in relation to the narrative journey, his epistemology, his geography, and literary journalism—this study argues that *Personal Narrative* can be considered an early form of the genre, warranting further analysis as to how *Personal Narrative* should fit in the canon of literary journalism.

Publishing for the Public and within a Scientific Community

The Prussian-born Humboldt generated an extensive publishing history. Walls, in *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science*, notes that the public held “Humboldt's reputation as one of the greatest minds of the age, and, after Napoleon, the most famous.”⁷ His major works began with *Relation Historique* (1814–31), a thirty-four-volume work covering findings from his South American expedition that he recorded, with extensive notes, in his journal. He was also known for his lecture-series-

turned-book, *Views of Nature* (1808), which catered to both scientific and artistic audiences of the time. Humboldt's last work was also, originally, a popular university lecture series among academics, *Cosmos* (1845), resulting in five volumes being published before his death, though the work was incomplete. Within *Relation Historique* are select volumes that contain Humboldt's *Personal Narrative*, which is also incomplete.⁸

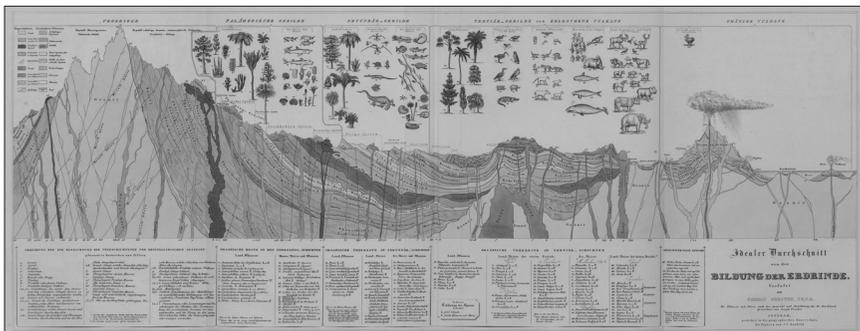
Yet *Personal Narrative*, despite its deficiency, was widely read, and several editions were published during Humboldt's lifetime. *Personal Narrative* was originally published in French, and Humboldt authorized the first translation of *Personal Narrative* to English, with Helen Maria Williams as translator. The completed translations were published from 1822 through 1826.⁹ Later unauthorized editions published during Humboldt's lifetime included Thomasina Ross's English translation (1852) as well as a German translation (1818–1832).¹⁰ Though the final products were in book form as volumes, *Personal Narrative* was derived from Humboldt's personal journal. As Walls writes in *The Passage to Cosmos: Alexander von Humboldt and the Shaping of America*, "His journal . . . is a highly personal record of awe before great beauty, of poetic flights, anxieties, sharp disappointments, and social sarcasms," and thanks to "public expectation (scientific travelers were supposed to make public the narrative of their journey) and by the urging of friends," Humboldt eventually published *Personal Narrative* as a more carefully crafted version of his journal.¹¹ Humboldt even records the calendar days of events in *Personal Narrative*, as seen in the following passages: "The 20th of June, before sunrise,"¹² and "On the 13th of July we arrived at the village of Cari."¹³ The calendar notation of days serves as another way to organize events and ideas, providing a sense of real time of events for the reader. Including calendar dates regularly in *Personal Narrative* also reflects the notation used in his journal out in the field, supporting the felt sense of actual, lived experience fueled by scientific inquiry and active reporting eventually reaching an interested public.

Humboldt, during his lifetime, garnered an international presence. Aron Sachs, in *The Humboldt Current: Nineteenth Century Exploration and the Roots of American Environmentalism*, reminds readers that natural phenomena, various landmarks, "Colleges, cafés, streets, public parks, and ships were all given Humboldt's name."¹⁴ Humboldt himself possessed a place within an international community of scientists and thinkers. His many connections within this community, among historical figures, included the likes of Thomas Jefferson, Joseph Banks, Charles Lyell, Jean-Baptiste Lamarck, Louis Agassiz, and Charles Darwin. Humboldt's network of professional connections and how he used them played a role in the development of what would later

become known as Humboldtian science. As Ottmar Ette attests, Humboldt “continued internationalizing his scientific network, thereby becoming a scientific cosmopolitan (or cosmopolitan scientist), . . . We could never imagine Humboldt’s conception of science (or ‘Humboldtian science’) without his cosmopolitanism, his ‘Weltbürgertum.’”¹⁵ Humboldt would not be Humboldt without the support of his community who, together with the author himself, produced a culture of collaboration from the late eighteenth to early nineteenth centuries. Alison E. Martin explains how the scientific culture of this time influenced Humboldt’s decision to include in *Relation Historique* “references to [his] place within the scientific community, not least in the preface, where he explicitly thanks fellow scientists for their cooperation and implicitly signals the networks and groups in which he operated.”¹⁶ The evidence speaks to Humboldt’s former renown and success, even if the twenty-first century has largely forgotten and reduced his legacy to brief notes. Fortunately, thanks to scholars, such as Walls, Sachs, Ette, and Martin, more readers have been reintroduced to Humboldt’s work, and further study of his past and present influence continues.

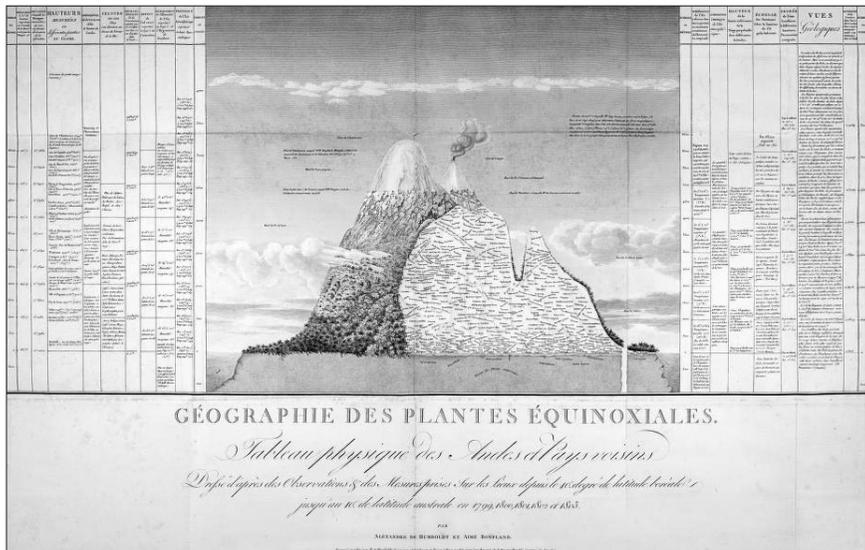
Visualizing Humboldt’s Efforts: The World and the Haze

For a visual of how Humboldt’s writing can be considered an early form of literary journalism, his own drawings and diagrams speak for his larger epistemology and writing, blending art and science. He used his skills in sketching and drawing to produce and incorporate into his scientific research charts and tables as well as visualizations that explained his findings and theories in ways that text could not. A prime example of this approach is his isothermal lines.¹⁷ Humboldt argued that understanding global temperature patterns required studies supported “by the comparison of a great number of observations, made in different parallels of latitude, and at different degrees of longitude. . .”¹⁸ In a true testament to the visualizations of data,



he created isothermal lines to reveal patterns in temperatures on maps. As Eberhard Knobloch attests, the isothermal lines were based on “mean values” of measurement, using a method that took “two observations every day: the minimum and the maximum, supposed to occur at sunrise and at 2 p.m.,” which added up to “730 thermal observations in the course of 1 year” to make the estimate.¹⁹ These lines allowed readers to visualize similar temperatures across the globe as well as future mapmakers to note distinct differences due to geography.

Humboldt also worked on a grand scale in sketching mountains, with a drawing of Mt. Chimborazo gaining fame after appearing in his *Essay on the Geography of Plants*. The diagram, captured on a six-square-foot canvas,



blends text and image in an almost overwhelming way. This image of Mt. Chimborazo, known as Humboldt’s *Naturgemälde*, fulfilled the role of multiple forms of communication. Because of the configuration of data and the intentions of the creator, this painting of nature, denoting wholeness, functioned not only aesthetically, but also scientifically. Laura Søvsø Thomassen summarizes the result: “The play with the textual, literary, and visual elements thus supports Humboldt’s vision of plant geography.”²⁰ The *Naturgemälde*, in particular, may showcase the limits of public thought and the constant search at the horizons of scientific inquiry. Claudio Minca describes the “*bruma*’ (haze) that envelops things at a distance and that for Humboldt was

the metaphor of every projectual intention: always on the horizon but never accomplished, indeterminate in its furthest contours.”²¹ Rachael Z. DeLue notes that Humboldt’s *Naturgemälde* is “commensurate with the ‘very abundance’ of the natural world,” yet “the image acknowledges its limitations as a vehicle for reintegrating phenomena that have been artificially separated into categories of information and rendered as notation.”²² In spite of the limitations of the image, *Naturgemälde* speaks to Humboldt’s epistemology and concept of physical geography often found in his writing. Walls elucidates the bridge that exists, connecting Mt. Chimborazo to Humboldt’s writing: “In effect, Humboldt did in language what he had done long ago in his Chimborazo cutaway, his thumbnail Cosmos—he used his double vision to give an aesthetically pleasing image of nature framed, literally, with the supporting reams of scientific data.”²³ *Naturgemälde* visualizes the limitations of public thought, while revealing the concept in scientific inquiry related to the interrelatedness of all things. *Naturgemälde* represents Humboldt’s own personal pursuit to better understand that interrelatedness. A visualization technique Humboldt frequently used to communicate his ideas was called the picturesque, originally a term in painting that gradually developed into a Romantic movement. Yet, Humboldt’s use of the picturesque in his writing results in works that contain the nature of literary journalism.

The Picturesque for Humboldt

The picturesque occurs in both Humboldt’s visuals and texts in *Personal Narrative*. The picturesque movement, according to Carl Thompson, was known specifically as “the cult of the picturesque, promoted most vigorously by the Reverend William Gilpin, who from 1782 published a series of ‘picturesque tours.’”²⁴ Gilpin wrote *Three Essays: Picturesque Beauty; on Picturesque Travel; and on Sketching Landscape* as a response and addition to Edmund Burke’s *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful* (1757). The signature difference in taste between Gilpin and Burke hinged on the concepts of smoothness and roughness, which, as Gilpin states, “the point lies here: to make an object in a peculiar manner picturesque, there *must* be a proportion of *roughness*; so much at least, as to make an opposition; which in an object simply beautiful, is unnecessary.”²⁵ Capturing the picturesque requires a sense of both smoothness and roughness. The depiction of landscape requires contrast between these two elements, from the jagged mountain peaks to the soft mountain meadows below. Humboldt was regularly presented with opportunities to place what were considered rough and smooth elements together in his writing, just as Gilpin suggests. A clear example of smooth and rough comes from Humboldt’s description of the

cave of the oilbirds. The picturesque here relates to the entrance to the cave. Elements which are smooth and rough are found in Humboldt's description of the cave in *Personal Narrative*:

At the point where the river forms the subterraneous cascade, a hill covered with vegetation, which is opposite the opening of the grotto, presents itself in a very picturesque manner. It appears at the extremity of a straight passage, 240 toises [an outdated French unit of measurement which equals 1.949 meters] in length. The stalactites, which descend from the vault, and which resemble columns suspended in the air, display themselves on a background of verdure.²⁶

Humboldt leaves readers with no doubt that what he describes is picturesque. In doing so, he deploys contrasts to describe the scene. The stalactites, which in this case are considered rough, stand in stark contrast to the greenery, which is the beautiful, smooth element that serves as the background for the stalactites. Notice, also, how Humboldt refers to the stalactites as columns, which gives the sense of the picturesque when the cave is then considered to be like an ancient temple.

A bold case of the smooth and rough comes from a boat ride on the Atlantic Ocean, amidst islands off the coast of Cumana. On a small boat, Humboldt in *Personal Narrative* describes how when porpoises “struck the surface of the water with their broad tails, they diffused a brilliant light, that seemed like flames issuing from the depth of the ocean.”²⁷ After speaking further on this phenomenon, Humboldt in the next paragraph of *Personal Narrative* refers to “barren and rocky islands, which rise like bastions in the middle of the sea,” with a moon that “lighted up those cleft rocks, bare of vegetation, and of a fantastic aspect.”²⁸ The porpoises themselves are smooth, along with the elements of water and bioluminescence. The rocky islands stand in stark contrast as the rough aspect of the scene underneath the moonlight.

Humboldt describes in a similar picturesque fashion the Caripe Valley (a region in northeastern Venezuela), where the research team spent several nights. Humboldt adds particular details that can be considered both rough and smooth in his description in *Personal Narrative*, stating, “The turf, that is spread over the soil ; the old moss and the fern, that cover the roots of the trees ; the torrents, that gush over the sloping banks of calcareous rocks ; in fine, the harmonious agreement of colours reflected by the waters, the verdure, and the sky ; every thing recalls to the traveller sensations, which he has already felt.”²⁹ Humboldt lists different parts that compose the scene, from the turf (considered smooth) and rocks (rough or rugged). More importantly, Humboldt makes the case for the combined effects of otherwise separate elements.

Smooth and rough elements that contribute to the development of the picturesque correspond and subsume under concepts of the sublime and beautiful, which also were incorporated into the picturesque. Burke evaluates these constructs when he compares objects:

For sublime objects are vast in their dimensions, beautiful ones comparatively small; beauty should be smooth, and polished; the great, rugged and negligent; beauty should shun the right line, yet deviate from it insensibly; the great in many cases loves the right line, and when it deviates, it often makes a strong deviation; beauty should not be obscure; the great ought to be dark and gloomy; beauty should be light and delicate; the great ought to be solid, and even massive. They are indeed ideas of a very different nature, one being founded on pain, the other on pleasure; and however they may vary afterwards from the direct nature of their causes, yet these causes keep up an eternal distinction between them, . . .³⁰

Burke strictly applies descriptions of how the sublime and beautiful differ, especially in their causes. For Burke, if elements of either are mixed, then the result is neither sublime nor beautiful. He is adamant in this case, saying, “Black and white may soften, may blend, but they are not therefore the same.”³¹ Burke, in rigidly applying these distinctions, does not allow for much contemplation beyond his definitions. Gilpin’s distinctions were less rigid as he blended both the sublime and beautiful to regularly produce what he called the picturesque. Gilpin made a case for the blending of elements of the beautiful and the sublime to make a picturesque that was distinctly Romantic. For Gilpin the picturesque was pleasing on both counts, allowing an appreciation of the beauty of a landscape, while also appreciating the sublime features of a landscape, with both coinciding in an image to produce the total picturesque effect.

Unlike Burke, Gilpin’s emphasis is on views of nature when he uses the picturesque. He considers the picturesque as a style that captures the whole while appreciating the parts, but there is a limit: “To this it is enough, that the province of the picturesque eye is to *survey nature*; not to *anatomize matter*. It throws it’s [*sic*] glances around in the broad-cast stile [*style*]. It comprehends an extensive tract at each sweep. It examines *parts*, but never descends to *particles*.”³² Humboldt appreciated this use of the picturesque for the blending of the sublime and beautiful, because this application of the picturesque neatly coincided with his own project to consider how parts relate to the whole in nature, scientifically and aesthetically. The initial appreciation of nature through aesthetics leads to an appreciation of nature scientifically, for Humboldt.

Often when trying to describe landscapes, Humboldt refers to elements of the sublime and beautiful, underneath the picturesque umbrella. A strong example of this exists in another description of the “Valley of Caripe”:

The aspect of this spot has something in it at once wild and tranquil, gloomy and attractive. Amidst a nature so overwhelming, we experienced only feelings of peace and repose. I might even add, that we are less struck in the solitude of these mountains with the new impressions we receive at every step, than with the marks of resemblance which we trace in climates the most distant from each other. The hills, by which the convent is backed, are crowned with palm-trees and arborescent ferns. In the evenings, when the sky denotes rain, the air resounds with the uniform howlings of the alouate apes, which resemble the distant sound of wind, when it shakes the forest. Yet amid these unknown sounds, these strange forms of plants, and these prodigies of a new world, nature every where speaks to man in a voice, the accents of which are familiar to his soul.³³

The way Humboldt incorporates such a variety of elements allows him to promote the general holistic view, but also allows him to provide lively particulars which enrich the description. The howler monkeys are in some ways sublime when their voices “shake the forest,” denoting power. When he refers to “these strange forms of plants, and these prodigies of a new world,” readers grasp a sense of the arabesque. What is “strange” or unfamiliar promotes a sense of wonder, which in this case encourages inquiry.

In this passage, there is a stronger sense of Gilpin’s picturesque that blends the sublime and beautiful, and there is even a note of how this scene contributes to Humboldt’s own thought processes and conclusions about the natural world. Humboldt refers to how nature in South America makes him think of other regions on the other side of the globe. In doing so, Humboldt supports his holistic view of interconnectivity on a global scale. The depiction of this scene agrees with Gilpin’s picturesque blend of the sublime and beautiful. Through the picturesque, Humboldt provides a front row seat to his scientific and personal responses to the environment.

For Humboldt again, the picturesque serves to fuel scientific inquiry. As he states in *Personal Narrative*, “The more imposing and majestic the objects we describe, the more essential it becomes, to seize them in their smallest details, to fix the outline of the picture we would present to the imagination of the reader, and to describe with simplicity what characterizes the great and imperishable monuments of nature.”³⁴ Whereas Gilpin might not agree to capturing the smallest details in descriptions, Humboldt has all the reason to attempt to capture these small details for the sake of his readers. In trying to present fine details on a grand scale, Humboldt shows how the small and diminutive can aggregate to form the big picture of grand scenes. Humboldt expresses the same thoughts in *Personal Narrative* when he reflects on the peak of Tenerife in the Canary Islands:

An expedition to the summit of the volcano of Teneriffe [*sic*], is interesting, not solely on account of the great number of phenomena which are the objects of scientific research ; it has still greater attractions from the picturesque beauties, which it lays open to those who are feelingly alive to the majesty of nature. It is a difficult task, to describe those sensations, which act with so much the more force as they have something undefined, produced by the immensity of the space as well as by the greatness, the novelty, and the multitude of objects, amidst which we find ourselves transported.³⁵

The immensity of accumulated details itself can be considered sublime, as the inundation of information stretches beyond the human capacity to comprehend all the minute details that constitute what appears before the eyes. Human reason is described as being defied by the immensity of the beauty in nature, which is thus sublime. What is sublime and beautiful here contributes to both the arts and sciences, with both reinforcing Humboldt's efforts.

For Humboldt, the picturesque applies not only to nature, but also to people, or people within nature. One example in *Personal Narrative* also comes from the island of Tenerife, when Humboldt describes chapels surrounding Laguna: "Shaded by trees of perpetual verdure, and placed on small eminences, these chapels add to the picturesque effect of the landscape."³⁶ Humboldt often refers directly to the picturesque in his writing, whether he describes nature or the people who live there. The picturesque contributes to Humboldt's efforts to understand nature and the human places within it, within his holistic geography.

Humboldt's Application of the Picturesque to Geography

Franco Farinelli, in his analysis of Humboldt's application of the picturesque to geography, has commented on Humboldt's interplaying objectivity and subjectivity. For example, in *Blinding Polyphemus: Geography and the Models of the World*, Farinelli argues that Humboldt in his geography creates a blend of the interplay of objectivity and subjectivity that is at times also self-reflective, even self-critical. There are, Farinelli notes, three stages to Humboldt's process of applying the picturesque to geography. The first step, *Eindruck*, "corresponds to the world understood as harmonic totality of the aesthetic-sentimental type."³⁷ This is immediately recognizable as the Romantic understanding of landscape, with the picturesque in the forefront. The second step, *Einsicht*, "disarticulate[s] the sentimental totality and initiate[s] translation into scientific terms."³⁸ This is where Rationalism and empiricism play a part in Humboldt's process. The third step, *Zusammenhang*, "means synthesis, the point of arrival, the last term in the cognitive process."³⁹ Yet, at the point of arrival, *Zusammenhang* also returns full circle to the beginning of Humboldt's process to form a renewed holism reinforced with Rationalism.

Zusammenhang, however, is not the end of Humboldt's process, but rather a new beginning for Humboldt's cycle of knowledge, which continues within an endless feedback loop. As Farinelli notes, "In the language of today's science, Humboldt's *Zusammenhang* corresponds to complexity, indeed, to global complexity."⁴⁰ Humboldt was keenly aware of the complexity of the world. Humboldt's three-step process uses the picturesque, as Farinelli describes, and coincides with Humboldt's general approach to science and exploration, to reach a better understanding of that global complexity.

Along with his process, Humboldt also keenly recognized human limitations, and this is where the *bruma*, or haze, sets in again as a point for discussion. Prior to speaking of the haze, however, the concept of landscape must be considered in relation to Humboldt's three-step process. As Minca explains, "Landscape is perhaps the only modern concept that refers to both the thing itself—and to its description."⁴¹ In this context, landscape serves the arts and the sciences. After appreciating the aesthetic whole of a landscape (*Eindruck*), the details of a landscape must be recorded accurately (*Einsicht*), but these details must also be arranged in a way to present a coherent image (*Zusammenhang*), in order for Humboldt to describe what he sees in a landscape and how he describes what is observed in a landscape. The depiction of haze in the landscape is a symbol for human limitations in the pursuit of knowledge or producing a coherent image. Drawing on Humboldt, Farinelli describes the haze as "the image of the 'sensuous infinite,' . . . the fatally incomplete character of what we see, the structurally unfulfilled character of what we know, the programmatically partisan character (even if aimed towards totality) of what we do."⁴² Minca harkens to Farinelli when he quotes Farinelli as having stated that the haze represents " 'not . . . a simple atmospheric effect, linked to particular climatic conditions, as one might be tempted to think; it is, rather, a cultural and political effect.' "⁴³ In this respect, Humboldt is willing to show the human agency involved in the pursuit of scientific knowledge. Humboldt is also willing to show the human agency involved in the construction of meaning when art attempts to frame an endless horizon. Furthermore, Humboldt is willing to show the human agency involved in reporting, describing what is observed and how, as writers do in literary journalism.

In Humboldt's *Views of the Cordilleras*, images serve as both works of art and tools for scientific discovery. Farinelli elaborates on this characteristic: "These colour engravings, in which artistic canon and scientific illustration become one, were the most subtle and incisive instrument of Humboldtian strategy, since the landscape, for Humboldt, coincides accurately with both of these."⁴⁴ Employing these images as instruments of "Humboldtian strategy,"



requires volumes upon volumes of scientific data. In turn, countless physical and theoretical tools are needed to collect and organize the data. Humboldt collected and organized the data to produce scientific diagrams that visually informed and appealed to the human eye.

To address his needs, Humboldt carried a complete suite of observational tools throughout his travels. Near the beginning of *Personal Narrative*, Humboldt devotes six pages to a detailed listing of his collection of observational tools.⁴⁵ Humboldt was also one of the first to apply statistics to data collected on plant distributions.⁴⁶ The statistics served as another tool to analyze the data without blindly accumulating facts. On the surface, Humboldt at times seems obsessed with observable details; in a way he is. Yet, if greater attention is not paid to his overarching aim in collecting mountains of data, readers can easily mistake Humboldt for a simplified empiricist. If people are open to appreciate Humboldt as a whole, they will find that his science is focused on approaching the comprehensive, and his tools are part of the process.

Many scholars, past and present, fail to understand the complexity of Humboldtian science. These scholars have described Humboldt as either a strict empiricist or as an overly idealistic romantic. As Walls states, “he doesn’t quite seem to fit in”; and worse, “his followers . . . with few exceptions appropriated from him what was ideologically useful for their own projects and ignored or repressed what they found inconvenient.”⁴⁷ Upon returning to and bringing a holistic perspective to Humboldt’s work, people may begin to appreciate the vision of his approach—which is neither that of the strict empiricist nor the idealistic romantic, but a blending of both. Walls finds

“Humboldt’s field method consisted of four principal commandments: explore, collect, measure, connect.”⁴⁸ Each of the commandments provides clarity for the field method. First, a researcher sees what can be explored. Next, materials must be collected from the field and measured. Finally, what was measured must be connected to what the researcher already knows. Depending on how the researcher interprets what was measured at the connection stage, the researcher may arrive with further questions, and thus more directions for continued research. In *Cosmos*, Humboldt called his methodology “rational empiricism.”⁴⁹ Science needed an appropriate infrastructure to begin comprehending the world, and Humboldt provided a model for beginning to understand how all the details measured in the world relate to one another to form the big picture.

Humboldt’s Picturesque in Relation to Literary Journalism

Humboldt’s particular use of the picturesque parallels concepts in literary journalism. Hartsock describes literary journalism as working “on a narrative spectrum or continuum somewhere between an unattainable objectified world and an incomprehensible solipsistic subjectivity.”⁵⁰ Humboldt’s *Personal Narrative* poses epistemological questions to the reader throughout, using elements, such as the picturesque, which relate to this narrative spectrum. After describing objectivity and subjectivity as examples of this spectrum, Hartsock states, “The results reflect profound epistemological and existential consequences.”⁵¹ Literary journalism, in straddling the worlds of objective and subjective writing, wrestles with questions concerning what people can claim to know; in turn, it wrestles with the nature of human existence and how humans, as a species, define their place in the universe. Humboldt developed his own theories for where knowledge can be found and how knowledge is acquired in his scientific theory and research methods, wrestling with the same epistemological concerns as literary journalism. For the dual purpose of fueling scientific inquiry and informing the public, Humboldt used the picturesque in his writing of *Personal Narrative*. Thus, this study would argue that his work should be considered part of the history of literary journalism. He provides a traceable tradition for literary journalists who write to support scientific inquiry or address the public on challenging scientific topics.

Distance and Perspective

The picturesque, though often associated with Romanticism, is surprisingly mimetic in the use of distance. As Gilpin suggests in his *Three Essays*, painting is “an art *strictly imitative*,” but painting can also be considered “*not* an art *strictly imitative*, but rather *deceptive*—that by an assemblage of co-

lours, and a peculiar art in spreading them, the painter gives a semblance of nature at a proper distance."⁵² As a result, there is a concern for the proper framing and perspective of an image in relation to distance. Gilpin encouraged presenting some details in works depicting landscapes but simultaneously warned against too much detail:

General ideas only must be looked for; not the peculiarities of portrait. It admits the winding river—the shooting promontory—the cattle—the abbey—the flat distance—and the mountain melting into the horizon. It admits too the relation, which all these parts bear to each other. But it descends not to the minutia of objects."⁵³

To present the semblance of an image, details must be reduced in volume for coherency of the produced image. Distance serves to provide the limits of detail to a landscape, while perspective dictates the focus of the image.

Humboldt's use of distance to provide perspective throughout *Personal Narrative* relates to two important concepts, which David Eason explores when he argues the two styles of writing found in literary journalism include ethnographic realism (ER) and cultural phenomenology (CP). For Eason, ethnographic realism (ER) assumes that "the relativity of human actions which motivates the reports poses no threats to traditional ways of comprehending and expressing reality," while cultural phenomenology (CP) "seeks to transform what is taken for granted in writing and reading a report into an object of analysis."⁵⁴ Humboldt speaks directly to the audience about what he observes, but openly discusses the nature of writing and reporting as well in *Personal Narrative*:

I was unwilling to interrupt the narrative of our voyage by the detail of the physical observations I made during the passage from the coasts of Spain to Teneriffe [*sic*], and thence to Cumana. Observations of this kind are not really interesting, except when we can dispose their results in such a manner as to lead to general ideas. The form of a personal narrative, and the nature of it's [*sic*] composition, are not well fitted for the full explanation of phenomena, which vary with the seasons, and the position of places. In order to study the laws of these phenomena, we must exhibit them in groups, and not separately, as they were successively observed. We are under great obligations to navigators, who have accumulated an immense number of facts ; but must regret, that hitherto naturalists have made so little use of their journals, which, when examined anew, may yield unexpected results. I shall insert at the end of this chapter the experiments, which I made on the temperature of the atmosphere and the ocean, the hygrometrical state of the air, the intensity of the blue color of the sky, and the magnetic phenomena.⁵⁵

This passage, in keeping with Eason's definition, presents a strong case of

CP. Humboldt explicitly relates the artifice and subjective construction that goes into the personal narrative form and the limitations of the form. He also clearly states how certain details are left out for the sake of constructing a meaningful narrative for the reader. Humboldt even explicitly refers to the importance of finding general ideas from the accumulation of facts for such detail to be useful. Though the previous passage is a case of CP, Humboldt in this passage also explains how the narrative form is constructed in a way that is, at least contextually, ER through the picturesque. In reference to the picturesque and landscape painting, distance is necessary. This is an aesthetic distance which is not unlike ER, in that the mirror concept is not thrown away all together. Rather, the picturesque admits some level of construction in creating a particular, coherent image.

The Picturesque as a Revolving Door

Distance in the picturesque goes hand in hand with Humboldt's tools of observation and measurement. Humboldt himself in *Personal Narrative* refers directly to the picturesque while using distance to construct the image. Humboldt also wants to appreciate landscapes scientifically as well as aesthetically. In describing Tobago in *Personal Narrative*, Humboldt begins with a picturesque effect and eventually breaks down the image into different details:

The island of Tobago presents itself under a very picturesque aspect. It is a heap of rocks carefully cultivated. The dazzling whiteness of the stone forms an agreeable contrast with the verdure of some scattered tufts of trees. Cylindric and very lofty opuntia crown the top of the mountains, and give a peculiar physiognomy to this tropical landscape. Their sight alone is sufficient to remind the navigator, that he has arrived at an American coast ; for cactuses are exclusively peculiar to the New World, as heaths to the Old. The north-west part of the island of Tobago is the least mountainous ; according to the angles of height, taken with the sextant, the most lofty points of the coast do not appear to exceed 140 to 150 toises. At South-west Cape, the land descends toward Sandy Point, the latitude of which I found to be 10° 20' 13," and the longitude 62° 47' 30." We perceived several rocks on a level with the water, on which the sea broke violently, and we distinguished a great regularity in the inclination and direction of the strata, which dip to the south-west at an angle of 60°.⁵⁶

Humboldt trades the paintbrush for chronometers, barometers, sextants, and the host of instruments previously mentioned. And while he records the data gained from the landscape scientifically (Rational), he also produces his emotional/imaginative (Romantic) response to the landscape through his narrative techniques of language. He is clear about his personal responses to

the experience, while working to commit to scientific accuracy in his observations and measurements.

The term picturesque can consist of two poles, with Rationalism and Romanticism feeding into each other, and Humboldt used the picturesque to contain these two poles as he wrote. A case in point is Humboldt's use of the picturesque, which developed with Romanticism, even though, as Gilpin describes, the picturesque possesses qualities that are also associated with Rationalism (that is, in the literary journalistic sense), such as the aesthetic distance and the implied artifice of depicting a landscape in the first place. For Humboldt, the picturesque simultaneously blends the objective and subjective as it blends the sublime and beautiful. The picturesque represents the grey area between pure Rationalism and pure Romanticism.

When readers join Humboldt on the llanos, Humboldt's description of his thought processes when he and his colleagues arrived at the South American grasslands speaks to his use of the picturesque as a revolving door between Rationalism and Romanticism. He describes the Mauritia palm in detail, a description which serves as the pivot point for his turning or revolving logic:

The plain was undulating from the effect of the mirage ; and when, after travelling for an hour, we arrived at these trunks of the palm-tree, which appeared like masts in the horizon, we observed with astonishment how many things are connected with the existence of a single plant. The winds, losing their velocity when in contact with the foliage and the branches, accumulate sand around the trunk. The smell of the fruit, and the brightness of the verdure, attract from afar the birds of passage, which delight in the vibrating motion of the branches of the palm-tree. A soft murmuring is heard around ; and overwhelmed by the heat, and accustomed to the melancholy silence of the steppes, we fancy we enjoy some coolness at the slightest sound of the foliage. If we examine the soil on the side opposite to the wind, we find it remains humid long after the rainy season. Insects and worms, everywhere else so rare in the *Llanos*, here assemble and multiply. This one solitary and often stunted tree, which would not claim the notice of the traveller amid the forests of the Oroonoko [Orinoco] spreads life around it in the desert.⁵⁷

In this passage alone, Humboldt references meteorology, in the wind; geology, in the sand; ornithology, in the birds; entomology, in the insects and worms; and the human experience, which enriches the imagination from the very soil in which the palm is planted. Empirically, Humboldt notices specific details near the plant. Rationally, Humboldt concludes that these elements, as noted separately, relate and are connected to the palm. Romantically, Humboldt gives his emotional, imaginative response to the experience. All of this indicates the connectivity of all things and, like the palm, the picturesque

understood this way gives new life to fields of research that need new avenues of inquiry and creativity to move forward. If readers investigate Humboldt's work, they must be careful not to fall into the same binary trap—getting lost in Romantic sprawling jungles or Rational desolate llanos—which doesn't allow the grey area to exist or the revolving door to continue in dynamic rotation.

Writing between Extremes

Humboldt actively used methods and styles representing both Rationalism and Romanticism. M. H. Abrams presents images representing the neoclassical and Romanticism in his own work, *The Mirror and the Lamp*: “The title of the book identifies two common and antithetic metaphors of mind, one comparing the mind to a reflector of external objects, the other to a radiant projector which makes a contribution to the objects it perceives.”⁵⁸ Humboldt was one of a few individuals from an earlier time in history who willingly used the reflector and projector as a paired resource for writing and research. The mirror can be understood as a representation of objective reporting, or Rationalism, giving the semblance of complete objectivity. The radiant projector, on the other hand, can represent subjective reporting, or Romanticism, where there is no attempt at complete objectivity but rather an explicit portrayal of the reporter's presence in the work. Just as Abrams describes what was happening in the literary world of Humboldt's time, Abrams also provides analogies in the reflector and radiant projector that closely align with ER and CP as described by Eason. Thus Humboldt, caught as he was between the age of Enlightenment and the formation of Romanticism, draws on both movements in his writing. His *Personal Narrative* struggles to find a home fully in one or the other movement, but exists instead, somewhere in between. Existing on the borders of objectivity and subjectivity, in the grey, is a hallmark of literary journalism as found in Humboldt's *Personal Narrative*.

This study would propose that literary journalism exists between two extremes. Joseph Webb argues that “there is no such thing as a pure Rationalist or a pure Romanticist.”⁵⁹ Trying to find a single case of either in literary journalism represents either an unlikely probability or an imaginative stretch. Rather, both Rationalism and Romanticism constantly feed into each other, within a dynamic and ever-changing relationship. Yet, just as Webb speaks of a gradient from a non-existent pure Rationalism to a non-existent pure Romanticism, so also ER and CP fail to act independent of each other, as both are tools for understanding what can be claimed as knowledge and how to acquire knowledge. William Roberts and Fiona Giles speak of the relationship between ER and CP as “woven together into a complex interrelationship,

[where] neither proceeds independently of the other but rather they merge and overlap, with both working toward the same goal, albeit using different methods.”⁶⁰ *Personal Narrative* is an immense work that manifests in varying degrees on such a spectrum.

Furthermore, *Personal Narrative* is a self-reflective work, which breaks down conventions of travel narrative. Oliver Lubrich, in “Alexander von Humboldt: Revolutionizing Travel Literature,” confirms *Personal Narrative*’s defiance of traditional norms of travel writing of the eighteenth and nineteenth centuries: “Humboldt is, by no means, the author of ‘totality,’ which he is so often seen to be. His writing deals, rather, with the impossibility of grasping foreign reality and presenting it in the traditional forms of (metropolitan) literature. Humboldt’s aesthetic is an aesthetic of lost certainty, his poetic is a poetic of de-authorized form.”⁶¹

In breaking with convention, Lubrich offers this concluding thought on Humboldt’s work: “[Humboldt] does not simply dissolve the conventional travel report, but replaces it with something new: a different form, which does not simply reprimand conventional practice, but points creatively to the future, towards modern poetics.”⁶² Hartsock will record another hallmark of literary journalism: “the form resists critical totalization or closure.”⁶³ Humboldt’s *Personal Narrative* does not conclude with his and his traveling companions’ physical return to Europe as would be expected. The account ends, instead, mid-expedition in Cuba, without narrative closure. Humboldt did not publish a final volume of *Personal Narrative* relating the rest of the expedition, which resulted in sundry inconclusive theories over the years as to why Humboldt decided upon this stark incompleteness; this adds to the sense of the inconclusive present found in literary journalism.⁶⁴ Science according to Humboldt will always be, to some degree, inconclusive or incomplete; there will always be more questions, and he makes this point in *Personal Narrative* for his readers. The contention here is that the “something new” Lubrich describes in Humboldt can best be found in literary journalism. *Personal Narrative* is worth further analysis in future literary journalism studies.

The case for Humboldt’s *Personal Narrative* as a form of early literary journalism provides a tradition that supports contemporary literary journalists whose work focuses on providing scientific knowledge for the public.

Even Tom Wolfe recognized a tradition for literary journalism that links to works like Humboldt’s *Personal Narrative*. Wolfe states, “The sort of reporting that one now finds in the New Journalism probably begins with the travel literature of the late eighteenth and early nineteenth centuries.”⁶⁵ Humboldt’s work itself predates Wolfe’s New Journalism by more than a century. Norman Sims recognizes literary journalism as “[a]n exciting and creative genre, . . .

now regularly employed in areas previously avoided by writers with literary ambitions, such as . . . complicated scientific and technical writing.”⁶⁶ This statement implies the absence of a literary tradition for literary journalists whose works focus on presenting challenging scientific material to the public. Literary journalists like John McPhee, who wrote the grand geological text, *Annals of the Former World*,⁶⁷ are working from a tradition that has yet to be fully realized in Humboldt. Even Thoreau, whom Hartsock notes for writing early literary journalism in his book, *Cape Cod*,⁶⁸ is indebted to Humboldt when he wrote the misunderstood (unpublished during his lifetime) scientific and literary work, *The Dispersion of Seeds*.⁶⁹ John Muir, whom Sachs quotes as saying, “I desire to be a Humboldt!,” is another writer working from a Humboldtian tradition, producing scientific travel literature that is similar to *Personal Narrative*. Thus, Muir is also worth considering in a literary journalistic vein.⁷⁰ The possible connections are traceable and worth exploring, from Humboldt to literary journalists of the twentieth and twenty-first century, for a literary journalism that does not shy from the sciences but enjoys the challenges and rewards of such efforts to address a wider audience.

Humboldt did not avoid otherwise difficult “scientific and technical writing,” but presented scientific material using the picturesque and other literary narrative techniques to create an immersive reporting experience. Humboldt’s epistemology and writing in *Personal Narrative*, provides a foundation for literary journalists seeking to address the public on challenging scientific topics: “always on the horizon but never accomplished, indeterminate in its furthest contours.” Recognizing *Personal Narrative* as literary journalism sets in motion an opportunity for the academic community to further study and recognize the works that approach the sciences in the spirit of Humboldt and literary journalism.

Raleigh Darnell is a production editor at Texas A&M University’s International Ocean Discovery Program (IODP), a fully funded National Science Foundation (NSF) program exploring the world’s oceans for new geological insight. His research interests include natural resources and science communications.



Notes

¹ Humboldt and Bonpland, *Personal Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799–1804*. *Personal Narrative* is published variously under Humboldt's native German surname, von Humboldt, and the French, de Humboldt. Endnotes for this study use the anglicized Humboldt, as commonly appears in citations of his work.

² Humboldt, introduction to *Personal Narrative*, 1:iv.

³ Walls, *Seeing New Worlds*, 84.

⁴ Humboldt, introduction to *Personal Narrative*, 1:iii (emphasis in the original). See also, Walls, *The Passage to Cosmos*, 37, 331n38; and additional sources on Humboldt and geography in Mathewson and Sluyter, "Humboldt in the Americas," special issue, *Geographical Review*, 96, no. 3 (July 2006).

⁵ Walls, *The Passage to Cosmos*, 271.

⁶ Hartsock, *A History of American Literary Journalism*, 3.

⁷ Walls, *Seeing New Worlds*, 97.

⁸ Humboldt, *Relation Historique*; Humboldt, *Views of Nature*; Humboldt, *Cosmos*.

⁹ Humboldt and Bonpland, *Personal Narrative*.

¹⁰ Wulf, *The Invention of Nature*, 507.

¹¹ Walls, *The Passage to Cosmos*, 40–41.

¹² Humboldt, *Personal Narrative*, 1:122.

¹³ Humboldt, 6:8.

¹⁴ Sachs, *The Humboldt Current*, 13.

¹⁵ Ette, "The Scientist as *Weltbürger*," 179.

¹⁶ Martin, "'These Changes and Accessions of Knowledge,'" 46.

¹⁷ Walls, *Seeing New Worlds*, 101.

¹⁸ Humboldt, *Personal Narrative*, 2:83.

¹⁹ Knobloch, "Alexander von Humboldt—The Explorer," 12.

²⁰ Thomasen, "Showing and Telling Science," 233.

²¹ Minca, "Humboldt's Compromise," 183.

²² DeLue, "Humboldt's Picture Theory," 39.

²³ Walls, *The Passage to Cosmos*, 223.

²⁴ Thompson, *Travel Writing*, 48.

²⁵ Gilpin, *Three Essays*, 5, 25 (emphasis in original); Burke, "A *Philosophical Enquiry*," 49–199.

²⁶ Humboldt, *Personal Narrative*, 3:133.

²⁷ Humboldt, 3:357.

²⁸ Humboldt, 3:357.

²⁹ Humboldt, 3:160–61.

³⁰ Burke, "A *Philosophical Enquiry*," 157.

³¹ Burke, 158.

³² Gilpin, *Three Essays*, 26 (emphasis in original).

³³ Humboldt, *Personal Narrative*, 3:160.

- ³⁴ Humboldt, 5:36.
- ³⁵ Humboldt, 1:180.
- ³⁶ Humboldt, 1:127.
- ³⁷ Farinelli, *Blinding Polyphemus*, 46.
- ³⁸ Farinelli, 47.
- ³⁹ Farinelli, 47.
- ⁴⁰ Farinelli, 48.
- ⁴¹ Minca, "Humboldt's Compromise," 179.
- ⁴² Alexander von Humboldt, *Kosmos. Entwurf einer physischen Weltbeschreibung*, vol. 1, Stuttgart, Cotta, 1845, 38, as quoted in Farinelli, *Blinding Polyphemus*, 53 (Farinelli's translation).
- ⁴³ Minca, "Humboldt's Compromise," 183, quoting Farinelli, *Blinding Polyphemus*, 48.
- ⁴⁴ Farinelli, 51.
- ⁴⁵ Humboldt, *Personal Narrative*, 1:34–40.
- ⁴⁶ Walls, *Seeing New Worlds*, 81.
- ⁴⁷ Walls, *The Passage to Cosmos*, 33, 22.
- ⁴⁸ Walls, *Seeing New Worlds*, 98.
- ⁴⁹ Humboldt, *Cosmos*, 49. The term "rational empiricism" appears in Otté's translation of Humboldt's *Cosmos*.
- ⁵⁰ Hartsock, *A History of American Literary Journalism*, 247.
- ⁵¹ Hartsock, 247.
- ⁵² Gilpin, *Three Essays*, 29 (emphasis in original).
- ⁵³ Gilpin, 85–86.
- ⁵⁴ Eason, "The New Journalism and the Image-World," 63.
- ⁵⁵ Humboldt, *Personal Narrative*, 2:48–49.
- ⁵⁶ Humboldt, 2:28.
- ⁵⁷ Humboldt, 6:7–8.
- ⁵⁸ Abrams, *The Mirror and the Lamp*, viii.
- ⁵⁹ Webb, "Historical Perspectives," 40.
- ⁶⁰ Roberts and Giles, "Mapping Nonfiction Narrative," 112.
- ⁶¹ Lubrich, "Alexander von Humboldt: Revolutionizing Travel Literature," 380.
- ⁶² Lubrich, 380.
- ⁶³ Hartsock, *A History of American Literary Journalism*, 70.
- ⁶⁴ Walls, *The Passage to Cosmos*, 46.
- ⁶⁵ Wolfe, *The New Journalism*, 50.
- ⁶⁶ Sims, "The Art of Literary Journalism," 3.
- ⁶⁷ McPhee, *Annals of the Former World*.
- ⁶⁸ Hartsock, *A History of American Literary Journalism*, 23; Thoreau, *Cape Cod*.
- ⁶⁹ Richardson, "Thoreau's Broken Task," 10; Thoreau, "The Dispersion of Seeds," 23–173.
- ⁷⁰ Sachs, *The Humboldt Current*, 27.

Bibliography

- Abrams, M. H. *The Mirror and the Lamp: Romantic Theory and the Critical Tradition*. Oxford: Oxford University Press, 1953. Paperback edition published 1958 by W. W. Norton (New York). Page references are to the 1953 edition.
- Burke, Edmund. "A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful (1757: second edition, 1759)." In *Edmund Burke: A Philosophical Enquiry into the Sublime and Beautiful and Other Pre-Revolutionary Writings*, edited by David Womersley, 49–199. New York: Penguin, 2004.
- DeLue, Rachael Z. "Humboldt's Picture Theory." *American Art* 31, no. 2 (Summer 2017): 37–39.
- Eason, David L. "The New Journalism and the Image-World: Two Modes of Organizing Experience." *Critical Studies in Mass Communication* 1, no. 1 (1984): 51–65.
- Ette, Ottmar. "The Scientist as *Weltbürger*: Alexander von Humboldt and the Beginning of Cosmopolitics." In "Proceedings: Alexander von Humboldt's Natural History Legacy and Its Relevance for Today." Special issue, *North-eastern Naturalist* 8, no. 1 (2001): 157–82. [https://doi.org/10.1656/1092-6194\(2001\)8\[157:TSAWAV\]2.0.CO;2](https://doi.org/10.1656/1092-6194(2001)8[157:TSAWAV]2.0.CO;2).
- Farinelli, Franco. *Blinding Polyphemus: Geography and the Models of the World*. Translated by Christina Chalmers. Chicago: Seagull Books, 2018. First published 2003 as *Geografia. Un'introduzione ai modelli del mondo*, by Giulio Einaudi editor (Turin).
- Gilpin, William. *Three Essays: On Picturesque Beauty; On Picturesque Travel; and On Sketching Landscape: to Which Is Added a Poem, On Landscape Painting*. London, 1792.
- Hartsock, John C. *A History of American Literary Journalism: The Emergence of a Modern Narrative Form*. Amherst: University of Massachusetts Press, 2000.
- Humboldt, Alexander de. *Cosmos: A Sketch of the Physical Description of the Universe*. Translated by Elise C. Otté. New York: Harper & Brothers, 1866. First published 1845 as *Entwurf einer physischen Weltbeschreibung* by Cotta (Stuttgart).
- . Introduction to *Personal Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799–1804*, by Alexander de Humboldt and Aimé Bonpland. 3rd ed. Vol. 1, i–li. Translated by Helen Maria Williams. London: Printed for Longman, Hurst, Rees, Orme and Brown, Paternostern Row, 1822.
- Humboldt, Alexander de, and Aimé Bonpland. *Personal Narrative of Travels to the Equinoctial Regions of the New Continent, during the Years 1799–1804*. 3rd ed. 6 vols. Translated by Helen Maria Williams. London: Printed for Longman, Hurst, Rees, Orme and Brown, Paternostern Row, 1822–1826.
- . *Relation Historique, du Voyage aux Regions equinoxiales du nouveau continent, fait en 1799, 1800, 1801, 1802, 1803, et 1804*. Stuttgart: F. A. Brockhaus, 1970. <https://doi.org/10.5962/bhl.title.43910>. Originally published 1814–1825 as *Voyage aux regions equinoxiales du nouveau continent*.

- Humboldt, Alexander von. *Views of Nature*. Edited by Stephen T. Jackson and Laura Dassow Walls. Translated by Mark W. Person. Chicago and London: University of Chicago Press, 2014. First published, 1808.
- Knobloch, Eberhard. "Alexander von Humboldt—The Explorer and the Scientist." Presidential address, Second Congress of the European Society for the History of Science in Cracow, Poland, September 8, 2006. *Centaurus* 49, no. 1 (2007): 3–14. doi:10.1111/j.1600-0498.2007.00058.x.
- Lubrich, Oliver. "Alexander von Humboldt: Revolutionizing Travel Literature." *Monatshefte* 96, no. 3 (2004): 360–87.
- Martin, Alison E. "‘These Changes and Accessions of Knowledge’: Translation, Scientific Travel Writing and Modernity—Alexander von Humboldt’s *Personal Narrative*." *Studies in Travel Writing* 15, no. 1 (February 2011): 39–51. <https://doi.org/10.1080/13645145.2011.535375>.
- Mathewson, Kent, and Andrew Sluyter, eds. "Humboldt in the Americas." Special Issue, *Geographical Review* 96, no. 3 (July 2006): iii–v.
- McPhee, John. *Annals of the Former World*. New York: Farrar, Straus and Giroux, 1998.
- Minca, Claudio. "Humboldt’s Compromise, or the Forgotten Geographies of Landscape." *Progress in Human Geography* 31, no. 2 (2007): 179–93. DOI: 10.1177/0309132507075368.
- Richardson, Robert D., Jr. "Thoreau’s Broken Task." Introduction to *Faith in a Seed: The Dispersion of Seeds & Other Late Natural History Writings*, by Henry D. Thoreau, 3–17. Edited by Bradley P. Dean. Washington, DC: Island Press, 1993.
- Roberts, William, and Fiona Giles. "Mapping Nonfiction Narrative: A New Theoretical Approach to Analyzing Literary Journalism." *Literary Journalism Studies* 6, no. 2 (Fall 2014): 100–117.
- Sachs, Aaron. *The Humboldt Current: Nineteenth-Century Exploration and the Roots of American Environmentalism*. New York: Penguin Books, 2006.
- Sims, Norman. "The Art of Literary Journalism." Introduction to *Literary Journalism: A New Collection of the Best American Nonfiction*, 3–19. Edited by Norman Sims and Mark Kramer. New York: Random House, 1995.
- Thomasen, Laura Søvsø. "Showing and Telling Science—The Integrated Use of Literature and Images in the Works of Erasmus Darwin and Alexander von Humboldt." *Interdisciplinary Science Reviews* 42, no. 3 (2017): 227–40. <https://doi.org/10.1080/03080188.2017.1345060>.
- Thompson, Carl. *Travel Writing*. Abingdon, UK, and New York: Routledge, 2011.
- Thoreau, Henry David. *Cape Cod*. Boston: Ticknor and Fields, 1865.
- . "The Dispersion of Seeds." In *Faith in a Seed: The Dispersion of Seeds & Other Late Natural History Writings*, 23–173, edited by Bradley P. Dean. Washington, DC: Island Press, 1993.
- Walls, Laura Dassow. *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science*. Madison: University of Wisconsin Press, 1995.
- . *The Passage to Cosmos: Alexander von Humboldt and the Shaping of America*. Chicago and London: University of Chicago Press, 2009.

- Webb, Joseph M. "Historical Perspectives on the New Journalism." *Journalism History* 1, no. 2 (Summer 1974): 38–42.
- Wolfe, Tom. *The New Journalism, with an Anthology*, edited by Tom Wolfe and E. W. Johnson. New York: Harper & Row Publishers, 1973. See esp. Part 1, The New Journalism.
- Wulf, Andrea. *The Invention of Nature: Alexander von Humboldt's New World*. New York: Vintage Books, 2016.