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Damien Ehrhardt & Hélène Fleury

Science and “transareality” in Humboldt’s cosmos

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I. About “transareality”

In order to understand the notion of “transareality”, at least two visions of cultural areas can be invoked: the one developed by Mauss and Braudel (*aire de civilisation*), the other used in area studies. In the first sense of the word, the concept “area” is referring to civilizations generally considered as perennial with a long-term history, likely to survive even revolutions (Braudel 1987). The second meaning applies to area studies as practiced in the USA and other countries in the 1960s and 1970s, which can be understood as a cover term for academic fields joined by a common commitment to language study, field research in local language(s) and other data, grounded theory and multi-disciplinarity (Szanton 2002: 5). Area Studies scholars deal with large regions of the world through a “multidisciplinary lens”. As shown by David Szanton (2002 : 5), the boundaries of the cultural areas are “historically contingent, pragmatic, and highly contestable”. Since critical perspectives of *postcolonial studies*, the “geographical fluidity” of notions like orientalism can be generalized to many global regions (Hodkinson/Walker 2013 : 6). Cultural areas must therefore be considered in relation to each other, with issues of cultural hegemony, implying to take into account transareal interactions.

For Ottmar Ette (2016: 37), the field of area studies is affected by its multidisciplinary and interdisciplinary set up that reaches only beyond individual disciplines. The regional research centers shall be supplemented by “*transdisciplinary* structurings”, crossing various disciplines. With his notion of TransArea, Ette (2016 : 46) aims at perspectivizing the planetary relationality in both: an internal and an external interweaving. For example, an approach to the Caribbean should not only take into account its “internal” relationality, but also its “external” relationality in a global panorama, considering not only northern countries, but also south-south relations (Ette 2016: 45-46).

Area thinking tends towards stability, whereas cultural and scientific phenomena should be considered in the dynamics of their relationality. Despite the cross-disciplinary approach, working on a single region of the world tends to close it within its borders. In a world in which large regions reify their identity through speeches borrowed from nostalgia for vanished empires, Huntington’s “clash of civilization” is never far away.

The situation is similar – with apparently less fatal consequences – between the main areas of knowledge. The object-based approach (f.e. in cultural studies) promotes transdisciplinarity, but the boundaries between natural sciences and humanities are not often crossed. Interdisciplinarity in the broadest sense remains rare in the academic world. Area studies do not take sufficient account of cultural transfers and mutations in the global circulation of ideas. Connecting cultural and disciplinary areas should be necessary in order to compare views on globalization. Beyond “transareal” dynamics, the suffix -ity recalls unifying concepts like Glissant’s “mondiality”, applicable to the state of presence of cultures in the respect of diversity (<http://edouardglissant.fr/mondialite.html>, accessed 26 February 2020) or Spivak’s (1999) “planetary” that understands the planet as a unified natural space, a kind of otherness on which we depend.

Alexander von Humboldt seems to be both, a scientist and a figure of transreality. How are science and transreality combined in his vision of cosmos?

II. Humboldt between science and cosmos

Humboldt's commitment to science is constant, from his youth training to his outcome in *Kosmos*. As an Enlightenment scientist, he was continually observing, measuring, and describing the world. Convinced that all results of observation can be reduced to numerical relations, he was proud of his instrument-based scientific approach. All this accuracy and thirst for knowledge lead him to innovations (Humboldt 2004 : 907), notably:

- the theory concerning the periodic swarm of meteors and the rain of shooting stars of the Leonid meteor;
- the discovery of the fluvial system Amazon/Orinoco in its complexity;
- the law of the decrease in mean temperature with the increase in elevation above the sea-level;
- the opening of new research fields as geography of plants, scientific orography (*wissenschaftliche Gebirgskunde*), or pre-Hispanic American studies (*Altamerikanistik*);
- the invention of isotherm lines.

However, Humboldt's work is not reducible to one of these innovations: it is driven by his vision of cosmos, which is also the title of his *opus magnum*. The use of this notion, with its metaphysic connotations, seems far away from all scientific approach. But Humboldt moved away from speculations, like those of Kepler concerning the analogy between musical interval ratios and distances between planets:

„Die Analogien der Tonverhältnisse mit den Abständen der Planeten, denen Kepler so lange und so mühsam nachspürte, blieben aber, wie mir scheint, bei dem geistreichen Forscher ganz in dem Bereich der Abstraktionen. Er freut sich, so größerer Verherrlichung des Schöpfers, in den räumlichen Verhältnissen des Kosmos musikalische Zahlenverhältnisse entdeckt zu haben; er läßt, wie in dichterischer Begeisterung, 'Venus zusammen mit der Erde in der Sonnenferne *Dur*, in der Sonnennähe *Moll* spielen: ja der höchste Ton des Jupiter und der der Venus müssen im Moll-Accord zusammentreffen'" (Humboldt 2004 : 557).

In line with the Enlightenment reason, he warned against mixing the "ideal cosmos" with the "real cosmos", the poetic character of the Harmony of the Spheres with the results of scientific observations:

"jeder ernsteren Forschung bleibt es geboten den idealen Kosmos nicht mit dem wirklichen, das Mögliche nicht mit dem durch sichere Beobachtung Ergründeten zu vermengen." (Humboldt 2004, p. 570).

Humboldt's cosmos is characterized by unity in diversity of phenomena, as harmony, blending together all created things on a whole animated by the breath of life:

"Die Natur ist für die denkende Betrachtung Einheit in der Vielheit, Verbindung des Mannigfaltigen in Form und Mischung. Inbegriff der Naturdinge und Naturkräfte, als ein lebendiges Ganze" (Humboldt 2004 : 10)

His program consisted of the cosmological understanding of the world, through an approach guided by the desire to keep world's diversity in unity. No plant, no animal can be considered as an isolated specimen. Each one belongs to the complex network of life. Humboldt holds together multiple phenomena of different natures and scales. His vision of the world mixes the macro and the micro (Péaud 2011 : 29). Each fact, in its unicity and locality, contributes to the global functioning of the whole system. Also similar spatially or temporally distant

phenomena are taken into account. In his letter to François Arago of 25 February 1829, he wonders about the “infinitely curious” similarity between the platinum mines in the Urals, Siberia and the Andes (Humboldt 1907 : 54).

Ernst Haeckel, the founder of ecology as a “science of the relations of an organism with its environment”, borrowed to Humboldt the idea of a coherent whole constituted by complex interactions (Wulf 2017 : 414). Linked with ecology, this notion of cosmos remains topical. So Humboldt discovered the idea of the “keystone species” long before Robert Paine forged the concept in 1969. It refers to a species with a large effect on its natural environment. Regarding the *Mauritia* palm, Humboldt and Bonpland “observed how many things are connected with the existence of a single plant” (Humboldt 1826 : 7). This palm symbolizes the nature as a living organism. Furthermore, Humboldt was the first to explain the crucial role of the forest in humidifying the atmosphere, holding the water, and protecting the soil against erosion (Wulf 2017 : 95). Already in his day, Humboldt warned of harmful consequences of deforestation caused by human activity on future generations:

“En abattant les arbres qui couvrent la cime et le flanc des montagnes, les hommes, sous tous les climats, préparent aux générations futures deux calamités à la fois, un manque de combustible et une disette d’eau” (Humboldt 1819 : 72).

This is one more reason to see in Humboldt a precursor of ecology. Thus Humboldt is a scientist, in phase with the rationality of the Enlightenment, but his encompassing vision of the cosmos, beyond sciences, also allows him to be a precursor of ecology and biodiversity.

III. Humboldt connecting disciplinary areas

What’s more, Humboldt was aware that social, economic, and political problems are linked to environmental issues (Wulf 2017 : 157). For him, all the natural, cultural, and social phenomena are interdependent. He considered them as a whole. Humboldt gradually developed his vision of the cosmos starting from what Laura Péaud (2015) calls a “connective geography”, considering its relationship to the world, based on the interactions between all natural and social facts. This new vision connects fields as different as cosmopolitics, physical description of the world, and geo-poetics. Here we see his willingness to take advantage of the most varied forms of knowledge and disciplinary areas. The physical description of the world (*physische Weltbeschreibung*) represents a science of the whole, at the interface of humans and nature, shaped by both social and natural facts. Cosmopolitics means for Humboldt the concrete and political application of his project, namely the transmission of knowledge useful to human beings and governments to ensure the progress of humanity. From this point of view, he pursues one of the Enlightenment ideals, that knowledge to make sense, shall be communicated to the people. Connective geography is linked with geo-poetics, a domain at the crossroads of sciences, arts, and humanities, apparently unusual for a scientist as him. But didn’t he claim to be a “man of letters” in his correspondence with Arago? He wrote to him on 20 August 1827: “Plus je suis rapproché de la Cour et plus il me paroissoit utile de prouver que ma première ambition est celle d’un homme de lettres” (Humboldt 1907 : 31). As shown by Soraya Nour (2015: 28), Humboldt was close to the romanticist notion of “prescientific” sympathy: for him, confused feelings, sensible intuition, and reason are linked. Thus, a book on nature must contain its objective as well as subjective sides: our inner world is constructed by the impressions that nature provokes in us.

In a passage of the *Voyage aux régions équinoxiales du Nouveau Continent*, Humboldt accompanies his quantified and precise measurements with a description of the atmosphere in which the scientist is immersed. Expressions reflecting aesthetic emotions and testifying to a contemplation of the sublime are used, f.e.:

“Tout d’un coup il se forma, du côté de la lune, 45’ avant son passage au méridien, un

grand arc coloré de toutes les couleurs du spectre, mais d'un aspect lugubre (...). Le ciel étoit d'une pureté extraordinaire" (Humboldt 1825 : 326).

IV. Humboldt connecting cultural areas

Is this recourse to sensibility and emotion really compatible with the supposed rationality of an Enlightenment man like Humboldt? His opinion had certainly changed after returning from his travel in America, during a time marked by the dissemination of *Naturphilosophie*. As other romantics, Humboldt was inspired by the elsewhere. His letter to Karl Ludwig Wildenow of 21 February 1801 testifies to his feeling of fullness associated to the tropical world:

"Die Tropenwelt ist mein Element u[nd] ich bin nie so ununterbrochen gesund gewesen als in den letzten 2 Jahren. Ich arbeite sehr viel, schlafe wenig, bin oft bei astron.[omischen] Beobachtungen 4–5 Stunden lang ohne Huth der Sonne ausgese[t]zt, ich war in Städten (la Guayra, Portocabello) wo das gräßliche gelbe Fieber wüthete u[nd] nie[,] nie hatte ich nur Kopfweh" (<https://edition-humboldt.de>, accessed 26 February 2020).

As this quote shows, each travel took place as an essential link of his research program. Concerning Humboldt's trend of thought, scholar opinions are divided: some asserting his belonging to Romanticism or enlightenment; some see a balance between both. This is the case of Soraya Nour (2015 : 28) for whom Humboldt's project contributes to giving nature and life their place beside reason without the supremacy of one over the other. So Humboldt realized the synthesis of the main European ideas of his time, while immersing in the experience of long-distant travels and field research.

1. The American expedition, 1799-1804

From his trip to the New Continent, Humboldt brought back a considerable amount of observations concerning natural history, but he was working also as an archaeologist, historian, economist, and observer of the social and cultural situation in Spanish America. In addition, according to Ette (2011 : 135), Humboldt studied for decades a *Biblioteca Americana*, including works of Clavijero or Sigüenza y Góngora. He shares the thoughts of these authors towards the emergence of a New World discourse. As Clavijero, Humboldt defends – in a proto-postmodern way – an equal ranking between European and "Mexican" Antiquities. Even the title of Clavijero's *Historia antigua de México* (1780) emphasizes a history of pre-colonial America based on indigenous sources.

Following the authors of his *Biblioteca Americana*, Humboldt attacked a conception of history that traces every 'civilizing' development back to European Antiquity. In the field of arts, despite his taste for ancient Greek art, Humboldt was against the generalization of European canon as the criterion of beauty, reducing indigenous art to a handicraft category. This pioneering vision goes hand in hand with the purpose of Humboldt's five-year trip to and across America: Funded mainly by his own resources and with the support of the Bankhaus Mendelssohn, it was one of the first expeditions without a colonization purpose. By travelling, he was able to explain the disastrous consequences of colonial exploitation on both environment and human beings. Nevertheless, he perpetually combined his demand for independence with his constrained integration into the political world (Peaud 2011 : 30, 31).

2. The Russian expedition, 1829

Humboldt's trip through Russia to the Chinese border shows his willingness to conduct research, discover and familiarize himself with other global regions. Invited by the Czar, the

political dimension of this expedition prevented him from taking too close an interest in the social situation of the subjects of the Russian empire, in particular the serfdom. The official purpose of his trip was to study platinum deposits in the Ural mines. But Humboldt took advantage of this opportunity to verify natural laws through comparative observations from plural continents and collect botanical and ethnographic data. As it was a relatively short trip, the information concerning the situation of the local economy was not based on field data, but mostly on travelogues of Germans settled in Russia. Therefore Michel Espagne (2011) points out that Humboldt's writings actually reproduce a German perception of Russia.

3. *The unrealized Indian expedition*

All his life Humboldt dreamed of an expedition to India, which never came true. In 1796, he mentioned the project of a trip to Italy, England and Western India to Willdenow:

“Meine Reise ist unerschütterlich gewiss, Ich präparire mich noch einige Jahre und sammle Instrumente, ein bis anderthalb Jahr bleibe ich in Italien, um mich mit Vulkanen genau bekannt zu machen, dann geht es über Paris nach England, wo ich leicht auch wieder ein Jahr bleiben könnte (...), und dann mit englischem Schiffe nach Westindien” (<https://edition-humboldt.de>)

Back from his American expedition, he renewed his travel plans to India several times, particularly on 3 October 1805 in his letter to Dietrich Ludwig Gustav Karsten. From 1805 until 1822, hardly a year passes without Humboldt planning a trip to Asia or Central Asia, but in vain. In 1808, the Russian minister Romancov offered him to pay the travel costs through his government. Humboldt refused, preferring to travel at his own expense because he wished to remain free and independent (<https://edition-humboldt.de>). Furthermore in 1811, Humboldt was considering the idea of a long-term travel around the world through Russia, Persia, Tibet, India, Ceylon, Oceania, and North America. The expedition was delayed by Napoleon's invasion of Russia and insurrections in Germany, then by the refusal of British authorities to grant him permission (Gorshenina 2012 : 284). Around the same time, Humboldt wrote to Napoleon that he was enthusiastic about undertaking an expedition to the sources of the Ganges and inside Asia. In 1812 he pointed to another correspondent the aim of his Asiatic journey: the Himalaya between the sources of the Indus and the ones of the Ganges. He also expressed his desire to spend a year in Benares (Théodoridès 1966 : 43). In addition, Humboldt contacted the office of the East India Company many times in order to realize his project, even with the support of the King of Prussia. This opportunity arose in June 1814 when Alexander and Wilhelm von Humboldt accompanied the King of Prussia to London to meet the directors of the East India Company (Garrido 2013 : 4). But this meeting didn't have the expected result. However, Humboldt did not give up his project so easily and always spoke about his forthcoming journey to Persia and India in his letter to Karl vom Stein zum Altenstein on 1st June 1820 (<https://edition-humboldt.de>).

All the period around 1800 that Humboldt described as an “era of indecision” (*Epoche der Unschlüssigkeit*) in his letter to Carl Freiesleben of 22 April 1798 is characterized by military, diplomatic and geopolitical instabilities, causing discontinuities in his scientific program (Péaud 2011 : 33). Unable to realize his own expedition, Humboldt ended up supporting the journey of the Schlagintweit brothers to India and Tibet from 1854 till 1857 (Palla 2019, and correspondence Humboldt/Schlagintweit: <https://edition-humboldt.de>).

As his dream of India could never come true, his approach to this area could not be based on fieldwork, but on knowledge from his brother and other sanskritists and philologists as Christian Lassen. So, rather than defending the Untouchables and the lower castes, he focused on Sanskrit texts of Brahmins and their description of nature in Vedic tales (Humboldt 2004: 207-209). But Humboldt developed a historical vision of globalization,

aware of longstanding exchanges between Europe, China and India, especially during the eras of Alexander the Great and the Umayyad Caliphate, then the expeditions to the Americas and other parts of the world during the “oceanic discoveries” (Humboldt 2004: 273-276, 302, 312-353). All these stages of globalization constitute, according to Humboldt, main moments in the gradual development and expansion of the concept of the cosmos as a Whole of Nature.

There is also an indirect connection between Humboldt and India, significant through the development of his notion of landscape, forged by his close relationship with British artists as Thomas Daniell and William Hodges. These painters of the Orient, as shown by Garrido (2013 : 1-2), had travelled to Asia creating a particular imagery, which inspired Humboldt’s desire to travel and his feeling of exotic taste. He met them as soon as the European tour with Forster, still before his trip to America. The artistic view of the painters, as well as Forster’s notion of “views”, contribute to make Humboldt a synthesizer of various knowledge, i.e. the analytical perspective common to scientists and the artistic sense of the sublime in nature.

V. Humboldt connecting languages

Humboldt’s works were written in French, German and Latin, but contain annotations in diverse languages of the Western world and other cultural areas. This thinking between languages appears in Humboldt’s travelogue to America, when he emphasizes the richness of indigenous idioms, which are as likely to express abstraction as European languages. Humboldt’s multilingualism comes to light quite clearly in two lists of Nahuatl and Quechua notions with their respective translations in Spanish and French, within a German text.

„Außer der mexikanischen Sprache redete man in America nahuatl noch die otomitische Sprache, die Matlazincas, Mixteca, Zapoteca, Totonaca, Topoluca usw. Was man von Ideenarmut dieser Sprachen und der südamerikanischen Sprachen sagt, ist tolle Unwissenheit. (...) Clavijero beweist, dass man in mexikanischer Sprache bis 48 Millionen und weiter bequem zählen kann. (...) Die Evangelien, Sprichwörter Salomons, ja Thomas a Kempis De imitation christi sind ins Mexikanische und ohne Einmischung fremder Worte übersetzt. Clavijero gibt eine Liste von abstractis und versichert, dass wenige bekannte Sprachen so reich an abstractis als mexikanische Sprache sind. Tlamontli Cosa. Jeliztli Essenza. Amacicacaconi Incomprensible. Cemicacjeni Eterno. Cahuitl tiempo. Ochnuelitini Omnipotente. Tejolia anima, Teixtlamatia mens. Tlanemiliztli pensamiento. Ebenso finde ich die Sprache der Inkas oder Quechua sehr reich an abstrakten Worten: Viñay Pacha temps. Oyuyac âme. Yayai pensée.” (Ette 2018).

These observations were also intended for the research conducted by his brother Wilhelm. Ottmar Ette (2011 : 131) describes this kind of writing between languages as the “reflected multilingualism” which can be considered as a challenge for the 21st century.

Conclusion

Humboldt was involved in various branches of knowledge and transcended them at the same time. Considering himself as a stranger between disciplines, he managed to be recognized in some of them and even created new ones as scientific orography or early American studies. The same can be said about his connections with global regions and languages. He became specialized in different cultural areas and learned to think in different languages. The definition of area studies given by Szanton perfectly matches with Humboldt’s approach. The latter can be considered as a specialist of area studies coming from the natural sciences.

But as we have seen, Humboldt was able also to situate the external relationality of these areas into a global panorama. This is the case of his research in the natural sciences, based on a comparative analysis of data from the entire world, but also the contrastive linguistic

studies he conducted together with his brother. In the view of Wilhelm von Humboldt (1904 : 316), this comparative approach is much more than “une occupation oiseuse, un luxe scientifique”, but even a means of better knowing one’s own language. From a cultural point of view, he was firstly a transatlantic mediator.

More than a great scientist of his time, he was a visionary: his notion of cosmos is close to our ecological thought, taking in account the interdependency of natural, cultural, and social phenomena. His large-scale synthesis was based on a mobility of knowledge between cultures, languages, and disciplines, which can be regarded as a nowadays challenge.

Yet Humboldt had always been a man of his time. Like his friend and mentor Georg Forster, he embodies the figure of the learned world’s citizen (*gelehrter Weltbürger*) at the end of the 18th century (Uhlig 2004). The notion of views, borrowed from Forster and connected by Ette (2014 : 121) with the current mobility of knowledge, is well adapted to the late 18th century, when the science of the Enlightenment meets the great voyages of the second phase of accelerated globalization. But in the 19th century, Humboldt contributed also to the construction of disciplines. He was a founding member and president of the Société de Géographie, one of the oldest learned societies in France. But Humboldt’s goal remains the construction of geography “as a world science, a place of unity of disciplines and elements of nature” (Péaud 2011: 29). He therefore wanted to build a discipline beyond disciplines, to grasp the world and the cosmos. In addition, he had been also inspired by the holism of *Naturphilosophy* and his experiences in other cultural areas. Thus, Humboldtian “transareality” is based on a very broad synthesis of the ideas of his time, transcending cultural areas. His work reflects the contradiction of the 19th century, which is revealed in the Hegelian dialectics: the identity of the cultural or disciplinary areas can be opposed to the mobility of knowledge which represents the moment of difference. Understanding the Humboldtian cosmos therefore requires considering this fundamental contradiction between areas and transareality.

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