Rousseau's Languages: Music, Diplomacy, and Botany

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Abstract

Little attention has been paid to some aspects of Jean-Jacques Rousseau's intellectual activity compared with others. His affairs as a diplomat, his contribution to music, and his affection for botany are only three of them. This article shows their connections with forms of expression in which words are replaced by other kinds of graphic representation, such as ideographic signs for their evocation and numbers for their efficiency and simplicity. These contributions were collected in his first and last intellectual projects: *Project for Musical Notation* (1742), a young man's idealistic challenge presented before Paris Académie des Sciences– and rejected by them; and *Characters of Botany* (1776-1778), a private senescence enterprise.

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Introduction

As it is well known, Rousseau's last years were devoted to botany[81]. Many ignore, however, that he reached a high knowledge of this science and that botany established among the leading likes of the 18th century as a result of his support. His *Letters on the Elements of Botany*—posthumously published in 1781—had an extraordinarily immediate acceptance, and soon, the first translations, reworkings, and imitations of the original work came out[82]. Rousseau wrote those letters only at the request of his friend Madame Delessert and took on work with no purpose of submitting these writings to print. No ambition encouraged him but sheer duty towards friendship. Like his other scripts on botany, his *Letters* were enclosed within the scope of privacy, as well as his *Fragments for a Dictionary* of *Botanical Terms* (from now on referred to as

[81] In the last years, some important monographies on this philosopher's botanic writings have come to light. On Rousseau's three hundredth birthday anniversary, Alexandra Cook, associate professor at the Department of Philosophy at the University of Hong Kong, published *Jean-Jacques Rousseau and Botany* (Oxford: Voltaire Foundation, 2012). In *Œuvres Complètes.* Raymond Trousson and Frédéric S. Eigeldinger, eds., (Paris/Genève: Slatkine/Champion, 2012) appeared Volume 11, *Écrits sur la botanique*, prepared by Takuya Kobayashi, from the University of Waseda (Tokyo). Only some years before Guy Ducourthial, professor at Muséum National d'Histoire Naturelle de Paris, published *La botanique selon Jean-Jacques Rousseau* (París: Belin, 2009).

[82] *Botanik für frauenzimmer in Briefen an die Frau von L** comes to light in Mannheim (1781); *Letters on the elements of botany* in London (1785); *Botanik for Frueutinimer i Breve til Fru de L* in Copenhagen (1789)*; Cartas os elementos de botanica*… in Lisbon (1801). The first Spanish edition – prepared by Diego Guerrero – dates back to 2005, followed by F. Calderón Quindós's translation (*Cartas sobre botánica*, Oviedo: KRK, 2007). As regards reworkings and imitations, see Calderón Quindós's works "Les lettres sur la botanique et ses refontes au tournant des Lumières en Angleterre, Suisse et France (1785-1809)" in Eric Francalanza, ed., *Rousseau en toutes lettres* (Rennes: PUR, 2014), pp. 375-389 ; "La réception scientifique des *Lettres élémentaires* et le phénomène de la botanique à l'usage des femmes" in Claire Jaquier and Timothée Léchot, eds., *Rousseau botaniste: Je vais devenir plante moi-même* (Fleurier/Pontarlier: Éditions du Belvédère, 2012), pp. 85-95.

Dictionary of Botany) and his *Characters of Botany*, which he wrote only for himself[83], and to which he did not—or did not want to—put the final touches.

His *Dictionary of Botany* consisted of a list of names and definitions—at least a fifth of which had been borrowed from other authors. His work of compilation started about 1765, after his first botanic raids. Gathering plants and making herbaria was for him as important as collecting names and creating a dictionary of use. He needed to provide himself with vocabulary that would help him and his addressees understand each other. The task was not easy, as names in the scope of botany were constantly under refinement, and their thesaurus relentlessly growing. Besides this, terminological repertoires, while increasingly necessary, were scarce and hardly comprehensive. Many authors had lent their genius to this immense task, and Rousseau made good profit of their progress in order to make his own.

Rousseau's *Dictionary of Botany* was in fact very far from the targets and method of his *Dictionary of Music*. His *Dictionary of Music* served as a basic framework for Diderot's encyclopedic project, before the *Dictionary* became a separate work 15 years later, in 1764. In the middle of the century, Diderot—the *Encyclopedia*'s main editor—was well informed about his friend's theoretical knowledge and first music compositions, so he could entrust the task to Rousseau. Rousseau agreed to accept the job, and after three months of formidable work, he gathered approximately four hundred entries. Accepting his friend's request meant participating in a unique enterprise in the publishing world, a project which implied getting at a good number of subscribers all over Europe.

[83] That does not mean, however, that Rousseau would not project his *Dictionary* publication once it had been started. The same can be said about his *Letters*, for which he seems to project a printed ending. As regards *Characters of Botany*, no sign gives evidence that Rousseau meant to take it to print.

Rousseau wrote for others, and to enlighten others was the goal of his work.

Characters of Botany is a singularly short work. There is no alphabetic writing in this script, and the "characters" are not letters, but freely built signs probably created between 1776 and 1778. Before delving into them, we should first pay attention to some other parts of Rousseau's work.

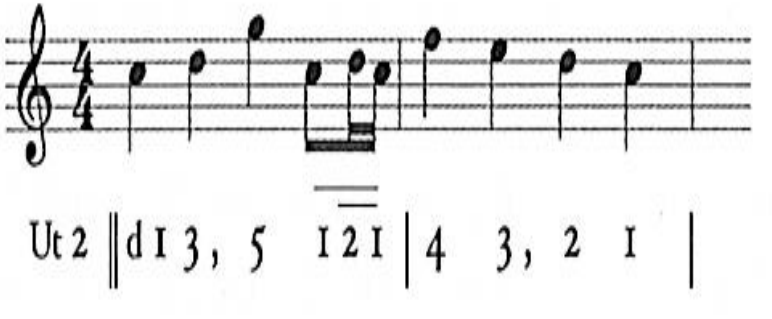


Image 1: From Anacleto Ferrer and Manuel Hamerlinck, eds., *Jean-Jacques Rousseau, Escritos sobre música* (Valencia, Universitat de València, 2007)

Writing without words: from music notation to spy games

Characters of Botany was not the result of Rousseau's writing without words for the first time, not even the product of the first time he invented signs and arranged them according to his own principles. Through musical notation, he had become familiar with non-alphabetic signs from his early age, and had been in contact with sheet music for nearly five decades. In fact, Rousseau had been copying scores for his clients since 1731, and that job could have inspired in him his first ideas about the imperfections of musical notation. He believed that current notation suffered important lacks and suggested eliminating traditional signs and replacing them with algebraic elements. In his view, half notes, crotchets, or

quavers could indicate sounds on the staff, but none of them did establish "aucun vrai rapport à la chose réprésentée"[84]. Numbers—universal and simple—could express mathematical relations between one sound and the other and its simplicity could facilitate music learning better than ordinary musical notation. As a consequence, not only did Rousseau dispose of old musical signs, but he also replaced the five-line staff with a single horizontal line and explained how numbers—one for each musical note of the scale—should be placed on the paper with respect to that single line according to the number of octaves. Only with some additional simple signs, Rousseau would finally eliminate the rubbles of musical language, which he described as a "système fort embrouillé et fort mal assorti" [85]. The first version of Rousseau's *Project for Musical Notation* was ready in 1742. That very year, he presented it in Paris Académie des Sciences. The commissioners were so kind as to read it but they questioned its novelty. With little argument, the court noticed too many coincidences between Rousseau's coded notation and father Souhaitty's, the author of a numeric notation system in 1677. Unhappy with the verdict, Rousseau sent his *Dissertation on Modern Music* to print in 1743. If the novelty of his reform had been questioned, he should defend it. That resulted in new developments of the project and a new approach. However, he did not receive the praise he thought he deserved. From the moment he stood before the Academy commissioners he knew he should give up the idea of promoting his reform on a large scale. The scholars made him notice that replacing traditional notation with new ones would mean reprinting all the former music sheets; therefore, he decided to lower his expectations. Rousseau's preface to his *Dissertation* explained that his notation was meant only with sheer propaedeutic character, as a way of facilitating the access to a kind of notation that—not being better than his own—was entirely integrated in the musical routines of the century. As Descartes

[84] Dictionnaire *de* Musique. In Bernard Gagnebin and Marcel Raymond, eds., *Œuvres Complètes* (Paris: Gallimard, vol. V, 1995), p. 936.
[85] *Ibid.*, p. 935.

himself did in his *Discourse on the Method*, Rousseau soon realized that the empire of customs was invincible[86].

Once his dispute with the scholars had finished, Rousseau settled in Venice as the secretary of the French embassy, in 1743. He had no training in diplomacy or experience in the international field, but he was proficient in Italian and had done pen pusher work on some occasion. He kept the position for hardly a year, as he fell out with the ambassador on whom his income depended. Throughout that period, he wrote by his own hand the communiqués weekly sent to the Court. The writing of those communiqués often demanded taking precautions. In order that spies could be evaded and confidentiality guaranteed, each country's central authorities prepared code books for its local offices abroad. The secretaries were the persons responsible for both the writing down and cyphering of the letters dictated by ambassadors and the deciphering of the secret mail received. That was an annoying job, and patience and careful attention were required for its correct performance; however, Rousseau found it simple and easy from the first day.

When confined in England many years later, Rousseau feared for his life and decided to get back to his old habit of cyphered writing. Having no code book to use, he prepared his own code book scrupulously, and wrote down the instructions that should be followed in order to decode his letters. This work doubtlessly expresses Rousseau's anxiety during his stay in England in the years 1766 and 1767. Yet, at the same time, it is excellent proof of his cryptographic skills and his general dexterity. Rousseau used the

[86] Naturalist Tournefort (1656-1708) was of the same opinion. At the end of the 17th century he had also conceived an integral reform project for botanic nomenclature. He was drawn to the idea of naming vegetal species after meaningful suffixes. However, in order that his reform could have followers and become universal, no name ought to have been used.

substitution technique, the same he had exercised during his diplomatic mission in Venice.

Du Peyrou, his confidant and friend from Neuchâtel, should replace numbers by letters according to the agreed-upon code. It was not just to assign one or several digits to each alphabet letter; in order to alleviate his friend's job and hinder spies, Rousseau had laid out twelve deciphering sections in his code book. If Du Peyrou referred to Hume, he just needed to use the expression *Noms propres* plus *790*, its numeric counterpart; if the issue was Geneva, the section was *Villes et Pays* plus *6*. Rousseau also used null signs, signs which invalidated the previous or next sign, and a good amount of duplications. Everything was meant to keep his correspondence secret. He felt he was being watched, and Du Peyrou confirmed his suspicion in his reply on 16 March 1767. It seemed that some alien hand had opened the envelope, which made Rousseau elaborate a second code book[87]. Here he kept his original twelve sections, but, instead of digits, he used two-letter bigrams. For better instruction of the addressee, each book included a *pratique.* See the transcription of the first one as well as its deciphering:

Ciphered text:
"eo.89.up.993.ti.59.600.983.75.41.512.911.406.69.798.861.69.797.ab"[88].

Clear text: "this number [code book] sets off on 28 February 1777."

From Rousseau's cryptographic activity, the section *mots fréquents* stands out. He felt he was the victim of a conspiracy. This idea became his obsession and the section was full of terms that denounced this drama: *Cache…é*, *chagrin*, *coup*, *cruel*, *danger*, *mort*,

[87] Both code books can be found in *Œuvres Complètes* (vol. V, pp. 553-584) under the title *Chiffres à chiffrer et à déchiffrer*.
[88] *Ibid*, p. 555.

etc. As a secret index of his worries, his code book thus anticipated both his mood and the main issue of his mailing with Du Peyrou. However, not everything under the section obeyed his obsession, and from the hundred and fifty terms composing his first version, some of them were meant to draw a friendlier setting. *Beau*, *bonheur*, *botanique*, *campagne*, *espèce*, *herbe,* were words that told about a hobby both friends shared, and to which they owed their friendship bonds[89]. Set in England, Rousseau did not neglect his communication with Du Peyrou or abandoned his devotion for botany. On the contrary, he still was highly keen to it and, thanks to his friend, managed to recover his botany library, which he had left behind in his beloved shelter: Ile de Saint –Pierre.

Complexity into words, or sensations into signs

Music and botany were Rousseau's two passions, and both were affected by his genius's singularity. It is possible to notice common features in the way he approached each of them. One of these features, perhaps the most meaningful one, was related with language. In his *Dictionary of Music* the entry "notes" reads: "Si le premier avantage des signes d'institution est d'être clairs, le second est d'être concis, quel jugement doit-on porter d'un ordre de signes à qui l'un et l'autre manquent?"[90] Botany seemed to be in the same situation, and Rousseau frequently expressed his disappointment at the high amount of terms that were about to bury a science whose objects of study simply laid before our eyes and under our feet. It was the disgust produced in him by this terminological eagerness that determined his preference for Linnaeus. Not only had Linnaeus introduced the principle of parsimony in botanic *denominatio*, but also in the art of writing. Linnaeus's *Species*

[89] From the same section, with the exception of the word "campagne," these terms are excluded from his second code book. This absence pictures a more gloomy drama.

[90] *Dictionnaire de Musique*. In *Œuvres Complètes* (vol. V, 1995), p. 935.

plantarum gathered the virtues of both clearness and concision, and Rousseau celebrated those rarities in a science beaten by the chaos and disconcert originated by terminological excess. Linnaeus, he said, "établit enfin une nomenclature éclairée" and managed to produce descriptions consisting only of that which was essential, "s'y bornant à un petit nombre de mots techniques bien choisis et bien adaptés".[91] Rousseau appreciated Linnaeus's reform. He firmly believed that observance of the rules introduced by this Swede naturalist meant saying goodbye to nomenclatural habit and recovering the study of plants.

This fondness of sign, instead of meaning, also governed -according to Rousseau- the destiny of music. He affirmed that, in fact, music was no more "the science of sounds" to musicians: "c'est celle des noires, des blanches, des croches, etc. Dès que ces figures cesseroient de frapper leurs yeux, ils ne croiroient plus voir de la Musique"[92]. With more interest in the means than in the aim, those musicians would not understand that signs different from the ordinary ones could be useful to write music and dictate sounds with equal or more efficiency than traditional quavers, crotchets, or half notes. There was no clearness and economy. Unclearness lay in the lack of relation between the sign and what meant to be represented; and the arrangement of signs on the staff provoked an exaggerated volume spreading of characters. That criticism could also be transferred to botanic literature; even to Linnaeus's *Species plantarum* (1753). Rousseau firmly believed that words could be contracted. Moreover, he firmly believed that they could be replaced by symbols and ideograms, hieroglyphics of the highest simplicity; not by abbreviated forms sanctioned by use, but newly invented elements able to offer an idea of vegetal realities. Thus, Rousseau became, if not the designer of a new way of concision, at least the man who gave this new fashion the widest development

[91] *Fragments pour un dictionnaire des termes d'usage en botanique*. In *Œuvres Complètes* (vol. IV, 1969), p. 1206.
[92] *Dictionnaire de musique*. In *Œuvres Complètes* (vol. V, 1995), p. 935.

throughout the 18th century. He invented approximately one thousand characters displayed in several lists, which are nowadays preserved in the Public Library of Neuchâtel[93].

Rousseau's unusual task had some precedents[94]. Symbols, in fact, were a means of scientific language before he invented his. And chemistry, a science he was familiar with, had inherited from ancient alchemists a good number of well-known symbols. Linneaeus's *Species plantarum* gathered some of them. Alchemy had used the ♀ ♂ symbols to refer to iron and copper; Linnaeus incorporated them to his work, forgot their alchemic meanings, and decided to use them to signal sexes: ♀ for feminine and ♂ for masculine. He used already existing material, but gave it biological meaning. The initiative of this Swedish botanist, which very probably came from an urge to abbreviate descriptions, must have inspired Rousseau, as perhaps did Michel Adanson's *Familles des plantes* (1763), which informed about the advantages botany could get from the adoption of ideographic language.

Kobayashi (2012) classified them into four types: *arbitraires* – with no direct relation between what is represented and how it is represented; *phonétiques* – when the sign is an abbreviation; *indicatifs* – when they indicate place or location; and *figuratifs* – when they convey outlines or sketches of the parts meant[95]. Numbers and mathematical signs could be added as a fifth type to

[93] There are three lists. A fourth one, kept for some time in Botanisches Museum Berlin, got lost during the Second World War. Its title *Caractères de botanique* originates from manuscript Neuchâtel 's MsR 21. In Takuya Kobayashi (*op. cit.,* p. 264, note 1).

[94] On this issue, see William T. Stearn, *Botanical Latin* (London: David & Charlie, 1966), particularly chapter XXIV "Symbols and abbreviations."

[95] Ducourthial en *op. cit.*, presents a similar classification and deals with "abréviations", "chiffres", "signes imitatifs," and "signes arbitraires". Kobayashi excludes numbers, perhaps because they mostly adopt an auxiliary role. For example, class *Triandria* holds a super-indexed 3 beneath with a shaft supporting an equilateral triangle.

this classification, as Rousseau uses the dash sign (-) in terms such as *duplo* or *duplum,* and the equal sign (=) in *aequalis* or *inaequalis*. From these five sign types, the figurative one is the largest and perhaps that which offers a more exact picture of Rousseau's inventive geniality, as can be shown in the examples below referring to different terms:

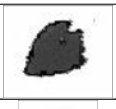
Corona (MsR 80)	
Cuculatus (MsR 80)	
Flos (MsR 80)	
Macula (MsR 80)	
Semen (MsR 80)	
Umbella (MsR 80)	

Image 2: From Guy Ducourthial, *La botanique selon Jean-Jacques Rousseau* (Paris: Belin, 2009)

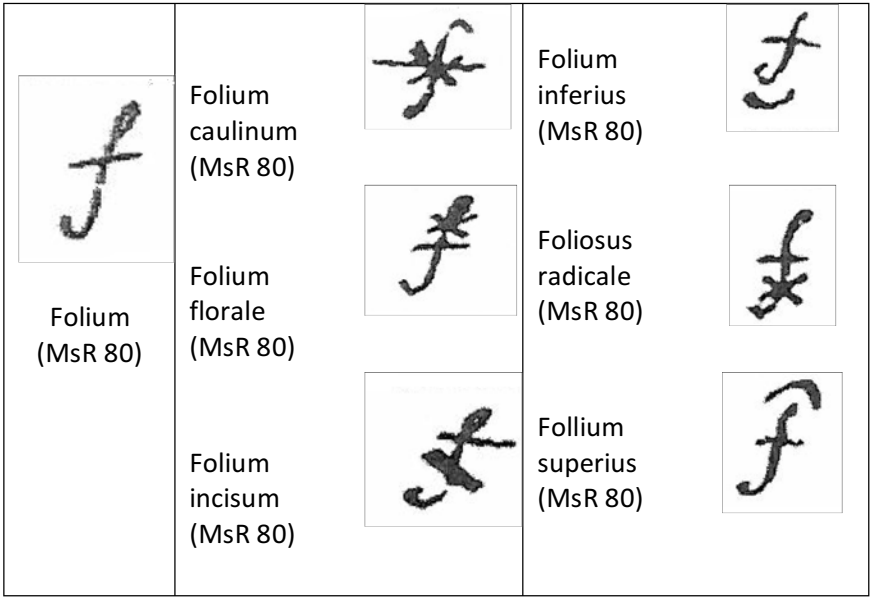
- The term *corona* is represented as a basket consisting of three lobes supported by an arc (a simple horizontal line underneath) and a cross on top of the central lobe,

- *Cucullatus* –adjective which means to express hoodish shape – is represented by an upright shaft holding a ring from a sort of hood oriented to the northwest comes up.
- *Flos* is a three-petal flower.
- *Macula* is a simple ink stain.
- *Semen* is an homunculus with a dot in the middle.
- *Umbella*, is an inverted triangle divided in three equal inverted triangles, etc.

Some of these symbols, with adjustments and extra features, are used to introduce specific information. Thus, the *f* abbreviation corresponding to *folium* occurs a dozen of times; if the leaf is radical – *folium radicale* – Rousseau draws an x-shape across its lower part; if it is *florale*, the x-shape is drawn across its upper part; if it is *inferius*, an inverted eyebrow shaped curved line occurs beneath the *f*. In this way, the word *folium* means leaf, but the abbreviation *f* turns up to be the stylish image of a plant open to the broadest descriptions. Exceptionally, Rousseau also states some usage standards: "The colon [:]," he points out, "turns the

noun into adjective"; therefore, while *petalum* is *p*, *petalinum* is *p:*.

Rousseau wrote no introduction to his *Characters of Botany*, which prevented us from knowing the exact reasons that made him undertake such an enterprise, in what circumstances he performed it, and how much time he devoted to it. We have been provided, however, with some of his friends' beautiful records, particularly François de Chambrier's, Pierre Prévost's, and Bernardin de Saint-Pierre's[96]. The three of them visited Rousseau in his old age, and



the three of them were equally drawn to the project their friend was shaping throughout his last two or three years of life. The news

[96] Ducourthial in *op. cit.* (ch. VIII: "Deux outils pédagogiques", pp. 301 y 302), quotes the three men's report.

they provide are of high interest, but one in particular deserves to be mentioned: Rousseau's enterprise was one conceived only for himself, one that, once concluded, may have served as some kind of Linnaeus's *Species Plantarum* portable substitute. Linnaeus's work was in fact too large, and that characteristic meant a serious inconvenience for those who could not do without them. Rousseau used it in his herborizations, and herborizing required freedom of movement, lightness, and easiness. None of that was offered by his *Linnaeus.* His solution to the problem was to make up an *écriture abrégée*. Linnaeus's description, containing only that which was essential, could not be trimmed, but they could still concentrate in symbolic formulas of "8 to 10 characters". That was Rousseau's objective: to create a symbol factory through which descriptions could be concentrated, to get rid of Linnaeus's work, and taking some benefit from it at the same time.