Science and natural language in the eighteenth century: Buffon and Linnaeus

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What form of knowledge is accurate knowledge when it comes to delineating the principles of nature? What form of language should be used to describe and to classify the immeasurable variety of plants and animals? Is it necessary and always fruitful to elaborate abstract, conceptual systems of explanation in order to attain knowledge about nature? Or is it sometimes preferable to describe reality as it actually reveals itself and somehow makes sense to us? These are some of the most fundamental questions appearing in the preliminary discourse to the Histoire naturelle by Georges Louis Leclerc de Buffon (1708–1788), from 1749, in which the author severely criticizes his colleague and rival Linnaeus for doing natural science in a most unnatural way.

Buffon’s critique of Linnaeus can very well be related to the general issue of language and science in the European eighteenth century. Buffon is the most famous eighteenth-century French naturalist, and he was, just like Linnaeus, a great scientific writer, but what is interesting is that he was also explicitly opposed to the way Linnaeus used language in his scientific work to describe objects of nature. There was indeed a scientific controversy between Linnaeus and Buffon; it is quite famous and has been studied previously\(^1\), but as far as I know this controversy has not been examined in the light of the precise question of how language should be used in order to describe and explain nature. In brief, Buffon rejects Linnaeus’ system for relating the kingdoms of plants and animals, saying that it is a system of meaningless words and advocating instead the use of a common sense-based language enabling us to describe nature in the way it actually appears to us.\(^2\) I will show in my study that Buffon’s opinions on writing largely relate to the aesthetics of French seventeenth-century classi-

\(^1\) See, for example, Larson 1967, Sloan 1976 and Le Guyader 1992.

\(^2\) Scott Atran has already used this concept of “common sense” to characterize Buffon’s scientific method. Claiming for example that common sense was to Buffon a “method of understanding” (Atran 1992: 231), he writes: “Buffon was to become the most persistent and influential opponent of the idea of system. Like Linnaeus, how-
cism and that he expresses, in the midst of the French Enlightenment, what we may very well consider to be an anti-modern view of scientific research. The main conclusion, however, is that Buffon’s critique of modern scientists’ use of language is far from out of date and that it raises the general and ahistorical question of the effective value of abstract language as a tool for understanding and describing reality.

1. Definitions and descriptions

Buffon published his major work *Histoire naturelle* in 36 volumes between 1749 and 1789. Together with the famous *Encyclopédie* (published from 1751), it is one of the great French scientific monuments of the whole eighteenth century. We will focus here on the way Buffon characterizes his own scientific method in the preliminary discourse published in the first volume from 1749: “Premier discours. De la manière d’étudier et de traiter l’Histoire Naturelle” [First discourse. How to study and to deal with Natural History].

It is striking how much Buffon speaks about Linnaeus in this text and how disdainful he is towards his Swedish colleague. In order to briefly situate Buffon’s relationship to Linnaeus in the intellectual and scientific context of eighteenth-century France, we can quote Phillip R. Sloan who writes about the importance of Linnaean botanies in French scientific circles at the time:

> The opening of the controversy between Linnaeus and Buffon dates from early in 1744 when Buffon delivered to a séance of the Académie a preliminary version of what was to be the *Premier discours* opening the first volume of the *Histoire naturelle*. By the time of the actual publication of his arguments in 1749 Buffon was taking on a formidable adversary. By this date Linnean systematics were sweeping European and English biological circles, with deep inroads even into French biology, in spite of the powerful influence of Pitton de Tournefort. All Linnaeus’ main taxonomic treatises, with the exception of the *Species plantarum*, had been published or were in press by this date, with the *Systema naturae* in its seventh edition. Under the guidance of Bernard de Jussieu, the second edition of Linnaeus’ *Genera plantarum* and the fourth edition of the *Systema* had been published at Paris within the decade, giving French equivalents of Linnaeus’ Latin names and supplying powerful impetus to the growth of French Linneanism. (Sloan 1976: 358)

> ever, Buffon did accept certain basic folk biological assumptions of common sense as conditions on any adequate reflection about natural history” (Atran 1992: 231).
Outlining his own scientific methods and his own approach to describing nature and designating its components, Buffon could hardly avoid, in 1749, marking his position on Linnaeus’ new taxonomies and on the new tendencies in natural science in general. What is remarkable is that the position of this important and influential eighteenth-century scientific writer essentially consists in saying that the tendency of modern scientists to describe nature on the basis of an abstract system is an inexcusable mistake.

The problem, Buffon claims, is that abstract systems have nothing to do with nature since they can refer only to themselves. Taking the example of contemporary botanies, Buffon states more precisely that if modern-day naturalists are unable to give an accurate image of nature this is essentially because they permit themselves to classify plants on the basis of a limited number of criteria. Buffon reminds his readers that a certain botanist (he has not yet named Linnaeus) categorizes plants on the basis of the number of their stamens, and says that this implies the obvious blunder of designating the whole on the basis of the part, that is, letting one single aspect of the object represent its entirety:

[Les botanistes contemporains font l’erreur de] vouloir juger d’un tout, & de la combinaison de plusieurs touts, par une seule partie : car vouloir juger de la différence des plantes uniquement par celle de leurs feuilles ou de leurs fleurs, c’est comme si on voulait connaître la différence des animaux par la différence de leurs peaux ou par celle des parties de la génération ; & qui ne voit que cette façon de connaître n’est pas une science, & que ce n’est au plus qu’une convention, une langue arbitraire, un moyen de s’entendre, mais dont il ne peut résulter aucune connaissance réelle. (Buffon 1749, 1: 15–16)

[Contemporary botanists make the mistake of] wanting to judge a whole or a combination of several wholes on the basis of a single part. For to desire to discern the differences of plants only by the difference of their leaves or their flowers is as if one set out to discern the differences of animals by means of the variations in their skins or generative organs; and who does not see that this way of knowing is not a science, and that it is at the very most only a convention, an arbitrary language, a means of mutual understanding, and that no real knowledge of things can result from it.

The use of a limited number of criteria to describe nature, or the principles of nature, thus implies for Buffon a disjunction between representation and reality. We must use language in order to represent nature, he says, and it actually seems to be a matter for Buffon of how to present nature to his readers, that is, in concrete terms, how to make it present to his readers. Recent botanical theories cannot be regarded as botanies since they are nothing but an arbitrary language of botanies, a language enabling specialists to communicate with each other
but not to actually refer to the realities of nature. And the most absurd of all botanical systems is the one elaborated by Linnaeus.

According to this system, Buffon argues ironically, a human being must be considered unable to recognize a plant or a tree unless he is armed with a microscope. He must likewise be considered unable to understand for example what flower he is looking at unless he can perceive the number of its stamens:

 [...] il faut aller le microscope à la main, pour reconnoître un arbre ou une plante ; la grandeur, la figure, le port extérieur, les feuilles, toutes les parties apparentes ne servent plus à rien, il n’y a que les étamines, & si l’on ne peut pas voir les étamines, on ne sçait rien, on n’a rien vu. Ce grand arbre que vous apercevez, n’est peut-être qu’une pimprenelle, il faut compter les étamines pour sçavoir ce que c’est, & comme ces étamines sont souvent si petites qu’elles échappent à l’œil simple ou à la loupe, il faut un microscope ; mais malheureusement encore pour le système, il y a des plantes qui n’ont point d’étamines, il y a des plantes dont le nombre des étamines varie & voilà la méthode en défaut comme les autres, malgré la loupe & le microscope³. (Buffon 1749, 1: 19–20)

 [...] it becomes necessary to go with a microscope in one’s hand to recognize a tree or a plant. The size, the form, the external appearance, the leaves, all the obvious features are useless. Nothing is important except the stamens, and if one cannot see the stamens, one does not know anything, one has not seen anything. This large tree which you perceive is perhaps only a bloodwort, it is necessary to count its stamens in order to know what it is, and since its stamens are often so small that they escape the naked eye or the magnifying glass, one must have a microscope. But unfortunately for the system there are plants which do not have stamens; there are plants in which the number of stamens varies, and therein lies the shortcoming of this method as in the others, in spite of the magnifying glass and the microscope.

Buffon consequently claims that Linnaeus’ system is counterproductive as a scientific tool since it does not help us to understand nature, but only makes it more difficult for us to know what we are really looking at. Linnaeus, Buffon says implicitly, uses language to represent nature in the sense of “standing in

³ Buffon gives a note at the end of this passage in which he quotes Johann Georg Siegesbeck, one of the most active opponents of Linnaeus, who had written in 1741: “Hoc vero sistema, Linnaei scilicet, jam cognitis plantarum methodis longè viliüs & inferiüs non solum, sed & insuper nimis coactum, lubricum & fallax, imò lusorium deprehenderim” [I have found this system, Linnaeus’s that is, to be not only most contemptible and inferior to previous methods of describing plants but also too strained, uncertain and fallacious and I would say even insignificant]. Buffon refers to “Vaniloq. Botan. Specimen refutatum a Siegelbeck. Petropoli 1741”. This is the only explicit reference to Linnaeus in Buffon’s text.
the place of nature” or “supplying nature’s place”, when he should use it in the sense of “bringing nature into presence”.

It is important to understand that the starting point of Buffon’s discussion on nature and scientific language is a profound conviction that nature cannot be an object of absolute knowledge. The very first phrase of the work stresses the point that every naturalist has an unlimited body of material to consider:

L’Histoire Naturelle prise dans toute son étendue, est une Histoire immense, elle embrasse tous les objets que nous présente l’Univers. Cette multitude prodigieuse de Quadrupèdes, d’Oiseaux, de Poissons, d’Insectes, de Plantes, de Minéraux, &c offre à la curiosité de l’esprit humain un vaste spectacle, dont l’ensemble est si grand, qu’il paraît & qu’il est en effet inépuisable dans les détails. (Buffon, 1749, 1: 3)

Natural history, taken in its fullest extent, is an immense history. It embraces all objects which the universe displays to us. This prodigious multitude of quadrupeds, birds, fishes, insects, plants, minerals, etc., offers to the curiosity of the human mind a vast spectacle, the totality of which is so grand that it appears, and indeed is, inexhaustible in its details.

This is why no scientific system in the world can thoroughly describe and explain all of nature’s manifestations. What we can do is to give a picture of nature as it appears to us and to draw reasonable conclusions about the way it is organized. Buffon writes subsequently that scientists should devote themselves to characterizing the objects of nature and not to defining or classifying them:

Les choses par rapport à nous ne sont rien en elles-mêmes, elles ne sont encore rien lorsqu’elles ont un nom, mais elles commencent à exister pour nous lorsque nous leur connaissons des rapports, des propriétés ; ce n’est même que par ces rapports que nous pouvons leur donner une définition : or la définition telle qu’on peut la faire par une phrase, n’est encore qu’une représentation très-imparfaite de la chose, & nous ne pouvons jamais bien définir une chose sans la décrire exactement. C’est cette difficulté de faire une bonne définition, que l’on retrouve à tout moment dans les méthodes, dans les abrégés qu’on a tâché de faire pour soulager la mémoire ; aussi doit-on dire que dans les choses naturelles il n’y a rien de bien défini que ce qui est exactement décrit : or pour décrire exactement, il faut avoir vû, revû, examiné, comparé la chose qu’on veut décrire, & tout cela sans préjugé, sans idée de système, sans quoi la description n’a plus le caractère de la vérité, qui est le seul qu’elle puisse comporter. (Buffon 1749, 1: 25)

Things in relation to us are nothing in themselves; they are still nothing when they have a name, but they begin to exist for us when we become acquainted with their relations to each other and their properties; it is even only by these relations that we can give them a definition. Now, a definition such as we can construct by a phrase is still no more than a very imperfect representation of the thing, and
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we are never able adequately to define a thing without describing it exactly. It is this difficulty of forming an adequate definition that is found constantly in all systems; in all the epitomes which have been attempted in order to relieve the burden of the memory. It must also be said that in natural things nothing is well-defined but that which is exactly described. Now, in order to describe exactly, it is necessary to have seen, reviewed, examined, and compared the thing which one wishes to describe; and it is necessary to do all this without prejudging things and without an eye to systematization. Otherwise the description would not have the character of truth, which is the only characteristic it can contain.

In order to attain and to communicate knowledge about nature we must be able to describe nature in the way we actually perceive it. As we can see from the quote above, a complete description of an object (as opposed to an abstract definition) is according to Buffon a description of its relations ("rapports") and its properties ("propriétés"). That is, we have to compare objects as they appear in their similarities and differences, as well as depicting them as they appear in themselves. Buffon thus says that we can never re-present, or render present, objects of nature by using language otherwise than to thoroughly describe those objects. For Buffon it essentially seems to be a question of being truthful to nature and truthful to the way nature reveals itself to us. Definitions are nothing but words and do not procure real knowledge.

2. Classical French aesthetics

In the paragraph we have just read, Buffon also comments on the *style* of description:

Le style même de la description doit être simple, net & mesuré, il n’est pas susceptible d’élévation, d’agrément, encore moins d’écarts, de plaisanterie ou d’équivoque ; le seul ornement qu’on puisse lui donner, c’est de la noblesse dans l’expression, du choix & de la propriété dans les termes. (Buffon 1749, 1: 25)

The very style of the description should be simple, clear, and measured. The nature of the enterprise does not allow of grandeur of style, of charm, even less of digressions, pleasantry, or equivocation. The only adornment one can give it is nobility of expression, of choice, and of propriety in the use of terms.

Correctness and simplicity are thus important to Buffon, and this because scientific language should never be anything more than a medium for truthful and instructive communication of knowledge and truth. Let us not forget that when Buffon was received into the French Academy in 1753, mainly thanks to the beautiful French he had written in the first volumes of his *Histoire naturelle*,
he delivered a speech known as *Discours sur le style* [Discourse on style], in which he set out his conception of style and artistic beauty.

Having previously worked a great deal on seventeenth-century French literature I find it obvious that Buffon’s opinions on writing relate to a great extent to the aesthetics of French seventeenth-century classicism. Let us take for example the great importance Buffon attaches to premeditation and control. A real writer, he claims, must perfectly know his subject; he must spend a great deal of time considering its different features, and he must necessarily advance in his work according to a rational plan. Buffon asks his readers why the creations of nature are always so perfect. The answer is that nature in all its creations works according to a plan from which it never deviates. It is likewise a good plan, as well as ambitious preparation, that liberates the creativity of a writer and ensures the quality of his style:

> C’est faute de plan, c’est pour n’avoir pas assez réfléchi sur son objet qu’un homme d’esprit se trouve embarrassé, et ne sait par où commencer à écrire. Il aperçoit à la fois un grand nombre d’idées ; et, comme il ne les a ni comparées ni subordonnées, rien ne le détermine à préférer les unes aux autres ; il demeure donc dans la perplexité. Mais lorsqu’il se sera fait un plan, lorsqu’une fois il aura rassemblé et mis en ordre toutes les pensées essentielles à son sujet, il s’apercevra aisément de l’instant auquel il doit prendre la plume, il sentira le point de maturité de la production de l’esprit, il sera pressé de la faire éclore, il n’aura même que du plaisir à écrire : les idées se succéderont aisément, et le style sera naturel et facile […]. (Buffon, 1926: 13)

It is due to the lack of a plan, it is for not having sufficiently reflected on his object that a thinking man finds himself perplexed, and does not know where to start to write. He perceives simultaneously a great number of ideas; and since he has not compared nor subordinated them, nothing compels him to prefer the one to the other, and so he remains in perplexity. But when he will have made himself a plan, when he will have assembled and ordered all his thoughts essential to his subject, he will easily distinguish the moment at which he should take up his pen, he will feel the point of maturity of the mind’s production, he will be in a hurry to make it open, he will even find it a pure pleasure to write. The ideas will easily succeed one another, and the style will be natural and easy […].

Buffon’s advice on writing can very well be compared to what Nicolas Boileau had written in his classical literary manifesto *L’Art poétique* from 1673:

> Avant donc que d’écrire apprenez à penser.
> Selon que notre idée est plus ou moins obscure,
> L’expression la suit, ou moins nette ou plus pure.
Buffon thus agrees with Boileau that a writer is more effective in his work if he is mentally in full control of what he wants to communicate. If such considerations can be so important in a discussion of the issue of style, it is because a scientific writer should have no other concern than to truthfully render his vision of reality. “Good style” can be understood as correct use of language, and there is consequently no better style in scientific writing, according to Buffon, than a use of words that permits us to perceive reality as it is.

Actually, if it is relevant to speak about seventeenth-century literary aesthetics when reading Buffon, it is primarily because he argues that style and beauty in literature (including scientific literature) are the result of a close connection between content and expression. “Bien écrire,” he writes, “c’est tout à la fois bien penser, bien sentir et bien rendre” [To write well is at the same time to think well, to feel well and to render well] (Buffon, 1926: 15). This means that we not only have to think carefully before writing, but must also make every possible effort to translate, that is to express with exactitude, what we have thought. Buffon argues eloquently that concrete writing should always consist in letting the pen travel through (“parcourir”) different spaces of premeditated ideas:

Pour bien écrire, il faut donc posséder pleinement son sujet, il faut y réfléchir assez pour voir clairement l’ordre de ses pensées, et en former une suite, une chaîne continue, dont chaque point représente une idée; et lorsqu’on aura pris la plume, il faudra la conduire successivement sur ce premier trait, sans lui permettre de s’en écarter, sans l’appuyer trop inégalement, sans lui donner d’autre mouvement que celui qui sera déterminé par l’espace qu’elle doit parcourir. (Buffon 1926: 15)

In order to write well, one must hence possess one’s subject completely; it is necessary to reflect upon it enough to see the order of one’s thoughts, and to form a sequence, a continued chain of which every point represents an idea. And when one will have taken up the pen, it will be necessary to conduct it successively on this first draught, without permitting it to deviate, without laying an unequal stress upon it, without giving it another movement but the one determined by the space through which it has to pass.

This is what real style in scientific literature is all about, Buffon says, and this closeness of fit between thought and expression will make our style precise, simple, clear and sustained.

In the same way, the so-called “tone” is according to Buffon nothing but conformity between the way we write and the subject we write about: “Le ton

\[4. The quote is taken from the first part, verses 150–154.\]
n’est que la convenance du style à la nature du sujet, il ne doit jamais être forcé; il naîtra naturellement du fond même de la chose” [The tone is nothing but the conformity of style to the nature of the subject, it should never be forced; it will emerge naturally from the very bottom of the thing] (Buffon 1926: 16). Expression should in other words always be adapted to content, and good style and real artistic beauty will emerge only when harmony reigns between the two. Referring to a typical French seventeenth-century idea of a close connection between truth and beauty, Buffon also writes:

[...] il n’y a que la vérité qui soit durable, et même éternelle. Or un beau style n’est tel en effet que par le nombre infini des vérités qu’il présente. Toutes les beautés intellectuelles qui s’y trouvent, tous les rapports dont il est composé, sont autant de vérités aussi utiles, et peut-être plus précieuses pour l’esprit humain que ceux qui peuvent faire le fond du sujet. (Buffon 1926: 16–17)

Only truth is stable, and even eternal. But a beautiful style is such only by the infinite number of truths it represents. All the intellectual beauties which it embodies, all the relations of which it is composed, are as many beauties just as useful as, and maybe even more precious to the human mind than those which make up the subject-matter.

Only what is true can possibly be beautiful, and the task of every real artistic creator is to describe nature without altering it. “Ce style figuré, dont on fait vanité, /Sort du bon caractère, et de la vérité; / Ce n’est que jeux de mots, qu’affectation pure / Et ce n’est pas ainsi que parle la nature” (Molière 1971, 2: 158) says the misanthrope in Molière’s famous play from 1666 about what he considers to be a bad poem. The classical idea of *vraisemblance* (“likelihood” rather than “probability”) is essential here: a work of art must resemble to nature, it must be an expression of nature, and it must not deviate from our natural perception of nature’s appearance.

It might seem obvious that the task of every scientific work is to give an accurate image of the objects it is meant to describe. The real problem here is not the general question of accuracy between scientific language and nature, but the more precise one of accuracy between scientific language and our conventional or common sense-based conception of nature. Linnaeus’ mistake, according to Buffon, is to present nature in his scientific work in a way that strongly deviates from the way nature presents itself to us in direct reality.

It must be remembered here that French classical writers were strongly attached to the idea that common sense (“le bon sens” or “le sens commun”) is the most effective instrument for perceiving and understanding reality. In La

Critique de L’École des femmes from 1663, Molière has one of his characters say: “Je regarde les choses du côté qu’on me les montre, et ne les tourne point pour y chercher ce qu’il ne faut point voir” (Molière 1971, 2: 648). This phrase can be seen as a recapitulation of some very important aspects of the method advocated by Buffon. If we want to be able to distinguish the significant properties of things and to appreciate their real value, we must look at them, Buffon says, as they are shown to us. What is important is for example – as we have already seen – that a scientist should observe the objects of nature in their integrity and not focus on a limited number of aspects of their being. If we call attention to only one side of an object we will inevitably fail to give an exact and comprehensive account of reality:

[…] l’on ne présente qu’un côté de l’objet, on met dans l’ombre toutes les autres faces ; et ordinairement ce côté qu’on choisit est une pointe, un angle sur lequel on fait jouer l’esprit avec d’autant plus de facilité qu’on s’éloigne davantage des grandes faces sous lesquelles le bon sens a coutume de voir les choses. (Buffon 1923: 14)

One presents only one side of the object, one puts all the other aspects in the shade; and ordinarily the side which one chooses is a point, an angle on which one lets the mind play with all the more ease as one deviates from the large aspects in which common sense usually look at things.

The use of common sense, that is the use of a conventional way of understanding and judging reality, permits us to get the whole picture of nature rather than only a limited aspect of it.

3. Giving meaning to nature

This idea of a common sense-based description of nature also emerges in Buffon’s conviction that all elements of nature should be considered in their relations to man. When he describes the kingdom of animals, for example, he finds it “natural” in the sense of “conformable to nature” to start with the animals that man has domesticated. This is because man is the centre of creation. In Buffon’s vision of nature there is no kinship between man and animals. Man was created to rule the universe and the natural history of mankind is to Buffon the history of how man became the master of nature. “Ce qui est en jeu, en relation avec le projet et l’ordre de l’Histoire naturelle, c’est moins la place de l’Homme dans la nature que sa position et son statut par rapport aux autres espèces vivantes”
What is at stake, in relation to the project and the order of l’Histoire naturelle, is less the place of Man in nature than his position and status in relation to other living species] (Tinland 1992: 543). And since man is the centre of creation and scientific knowledge is human knowledge, it must be considered legitimate to describe nature not only as it appears to man, but also as man relates to it. Any other depiction of nature would be inaccurate and scientifically unjustified. To describe nature in accordance with the principles of common sense is thus at the same time to describe nature in the way it makes sense to us, that is, in the way we give meaning to its objects in their relationships to us.

The importance given by Buffon in his work to common sense and thereby to meaning and meaningfulness may surprise us. We are dealing with one of the great French eighteenth-century scientific writers, and we are used to thinking of the French eighteenth century as a period when new empirical scientific ideals were emerging and when ancient forms of rationalist, metaphysical and meaning-oriented thinking were being severely questioned. It is a generally accepted idea today that the eighteenth century marks a breakthrough for modern Western society, and that modernism has made us more practical and pragmatic than before. The problem is, however, that modernism has also made it more difficult for us to claim the possibility of a meaning-oriented description of reality. Modern man can use reality, he can describe it in terms of precise knowledge, but he cannot assign it an inherent meaning.

It becomes clear that, in this perspective, Buffon can be understood as a sort of opponent of modernism. As we have seen, Buffon is an eighteenth-century scientist who rejects abstract systems of classification based on a limited number of criteria. He is a scientific writer who prefers characterization to precise definition, who believes the task of language is to reproduce the entirety of the reality it designates and not to provide designations for abstract concepts. He is, moreover, a scientific writer who relates to classical aesthetics, according to which a writer should reproduce nature as man naturally perceives it and according to which common sense is the most effective tool to gain and communicate knowledge about nature. But Buffon is also anti-modern in the sense that he refuses to abandon a meaning-oriented explanation of nature, in which animals and plants are described through their signifying differences, but also through a historical evolution having resulted in the nature we can observe today. In Buffon’s world, meaning is thus produced thanks to synchronic and diachronic systems of classification whose terms can always be related to the place man himself occupies in the space and time of reality.

Objects of nature are in other words described as meaningful in Buffon’s system. We read earlier in a quotation from the preliminary discourse of the Histoire naturelle that we can perceive the existence of things only when we
distinguish their relations and properties (“Les choses par rapport à nous ne sont rien en elles-mêmes, elles ne sont encore rien lorsqu’elles ont un nom, mais elles commencent à exister pour nous lorsque nous leur connaissons des rapports, des propriétés” [Buffon 1749, 1: 25]), and we said that Buffon accuses Linnaeus of providing definitions instead of knowledge, and that he wants scientists to describe the elements of nature and not to name them, since names never can take the place of true representations. Let us now add that Buffon implicitly also accuses Linnaeus of doing meaningless science, since the latter refuses to describe elements of nature as they appear to us in relation to each other. Nature should according to Buffon be described as an organic system where everything can be related to something else and where, in one way or another, all elements can finally be related to man and to his existence in the world.

4. Conclusions

To conclude, I would say that we are dealing here with an opposition between two opposite conceptions of scientific method and language. On the one hand we have what we may regard today as real science, involving the establishment of and reference to a precise system of explanation, use of a specialized (and hence limited) perspective, and the use of a specific (and often abstract) and partially invented terminology. On the other hand we have a common sense-based method and use of language, characterized by a rejection of limited systems, a belief in a comprehensive description of reality, and the idea that abstract systems are meaningless and even ridiculous. Perhaps we believe too easily today that we all automatically agree with Linnaeus in saying that science should of course abandon common sense and that it should of course use precise and abstract language. The fact is, I would say, that what Buffon discusses in his preliminary discourse is still a burning question, and especially within the field of the humanities.

We can for example ask ourselves to what degree it is generally accepted to speak about literature with the help of abstract systems. Is it really always well accepted to speak about human action, in real life or in literature, with the help of specialized theories such as the sociology of Pierre Bourdieu7 or the psychoanalysis of Jacques Lacan8? If a doctoral student today considers it relevant to exploit these kinds of theories when reading and explaining fictional literature, he or she will inevitably at some point in his or her work be accused by someone

7. See for example Bourdieu 1979 and Bourdieu 1998.
of doing exactly what Buffon accuses Linnaeus of doing, that is, simplifying a complex reality, using terms that have no meaning, forgetting reality itself and producing a purely artificial work that will soon lose its interest, since its theories will be replaced by others. And the alternative way of working is always the one advocated by Buffon, that is, to describe reality as it simply and naturally appears to us, to use a common sense-based language in our analyses, and of course to focus on the aesthetic aspects of our own presentation.

My conclusion, then, is that although we may believe that we always defend modern science and that we consequently embrace Linnaeus’ position against Buffon’s, practically it is often, if anything, the other way round. I am not saying that we should do one or the other (we should probably do both), I am only saying that it is often difficult, and that it takes a lot of courage – and probably a good theory – to abandon common sense-based rationality in favour of pure scientific discourse. The scientific controversy between Buffon and Linnaeus, which took place in the middle of the eighteenth century when abstract science had just emerged, may very well be of little interest to modern natural science (although a French biologist like Hervé Le Guyarder has claimed the opposite9), but it is still highly relevant in the humanities. We are still hesitant in the face of modern science’s demand for precision and specialization, and we still often resist giving up the idea of a synthetic, common sense-based depiction of reality as it appears to us in its entirety.

And perhaps we are right in not giving up the ideal of a “natural” method of describing reality. In his interesting article “Linnaeus and the Natural Method”, James L. Larson remarks that Linnaeus was very well aware of the artificiality of his sexual system and that he wished to supplement his purely scientific system with a system based on some sort of more “natural” method: “Linnaeus’ reflections on the natural method […] form a complement to his sexual system of classification. Aware of the difference between a practically commodious system and a method consonant with affinities observable in nature, Linnaeus conceived a natural method which would represent all natural affinities fundamental to botany” (Larson 1967: 312). This natural method was outlined by

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9. “Les Bases scientifiques de son [de Buffon] antagonisme avec Linné, paraissent scander l’histoire de la biologie, des balbutiements de l’anatomie comparée jusqu’à l’actuelle anatomie moléculaire. Elles correspondent donc, en biologie, à un des invariants de la pensée conceptuelle qui réapparaissent quels que soient les hommes et les techniques.” [The scientific bases of his antagonism towards Linnaeus seem to accentuate the history of biology, from the early days of comparative anatomy all the way to current molecular anatomy. They thus correspond, in biology, to one of the invariants of conceptual thought that re-emerge independently of men and techniques] (Le Guyader 1992: 491).
Linnaeus in his *Fragmenta methodi naturalis*, first published in *Classes plantarum* in 1738 and later on in a revised version in *Philosophia botanica* in 1751. Larson writes: “The groups [of criteria for distinction of plants] listed in the *Fragmenta methodi naturalis* are based, not upon the reproductive function, but upon the general outward appearance of plants […]. By means of such general resemblances plants could be grouped, as Linnaeus admitted, without injustice to actual, observable affinities” (Larson 1967: 313). According to Larson, however, Linnaeus failed to invent a natural method because of his inability to see other definitive characters in plants than their parts of fructification: “The artificial sexual system of classification, which satisfied limited professional requirements, could not attain any significant contact with knowledge of natural objects. […] Linnaeus’ arbitrary limitation of definitive characters to the parts of fructification made it impossible for him to discover any grouping of genera less artificial than the system of classification based upon stamens and pistils” (Larson 1967: 320).

This is a perspective that to a certain extent justifies the critique formulated by Buffon and that permits us to consider the scientific achievements of Linnaeus and other eighteenth-century scientists in a somewhat different light. The invention of the sexual system was one of many significant steps made in the eighteenth century towards modern science and towards the use of abstract scientific language, but it may also be regarded as one of many examples of the *alienation* which modern science implies from a sometimes more spontaneous and thus “natural” perception of nature.

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