

## Locke, Leibniz and Borges on Particulars and Universals in the *Nouveaux Essais*

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### 1. *Funes the Memorious*

Jorge Luis Borges tells us of a certain Ireneo Funes, a simple kid from Fray Bentos, Uruguay, who was thrown from a horse and paralyzed. Already before the accident, Ireneo was known for some eccentricities: he had an extraordinary memory of proper names and was known in town as the “Chronometric Funes” for his perfect recall of time. After the accident, his mental condition becomes so eccentric that one hesitates whether to describe it as a wondrous gift or as a cruel defect: Ireneo Funes acquires perfect recall of all his sensations, so that he is no longer capable of forgetting any of them, nor any difference between them.

Borges recounts:

He told me that before that rainy afternoon when a blue-gray horse threw him he was like an ordinary person: blind, deaf, addlebrained. For nineteen years he looked without seeing, listened without hearing, forgetting everything, or almost everything [...].

Ever since that rainy afternoon, Funes could perceive

all the leaves and tendrils and fruit that make up a grape vine. He knew by heart the forms of the southern clouds at dawn on the 30<sup>th</sup> of April, 1882, and could compare them in his memory with the veins in a marbled book in Spanish binding he has only seen once and with the outlines of the foam raised by an oar in the Rio Negro on the night before the Quebracho uprising (Borges J. L., 1962, 63).

We can fully and intuitively grasp the form of a circle, of a right triangle; Ireneo could do so with the stormy mane of a pony, with a herd of cattle on a hill, with the

changing fire and its innumerable ashes, with the many faces of a dead man throughout a long wake” (Borges J. L., 1962, 64). “Funes could continuously perceive the quiet advance of corruption, of weariness. He saw – he noticed – the progress of death, and of dampness”. “He was the solitary and lucid spectator of a multiform, instantaneous and almost intolerably precise world” (Borges J. L., 1962, 65).<sup>1</sup>

Like some curious minds in the 17<sup>th</sup> century, Ireneo Funes considered certain ambitious projects: he invented an infinite vocabulary for the natural numbers, in which each number has a distinct (and unrelated) name; as well as a mental catalogue of all his memories (Borges J. L., 1962, 65). He could easily run in his mind all the images he perceived in any day of his life, which would, of course, take him a whole day. As Borges remarks, (thinking probably of Wilkins, Leibniz and Locke among others), such projects are obviously senseless, yet they betray a certain grandeur (Borges J. L., 1962, 65). As it turns out, Funes was not ignorant of Locke’s project of a language in which each individual thing would have its individual name (E 3.3.1-2, 409). According to Locke, “All Things, that exist, being Particulars, it may perhaps be thought reasonable, that Words, which ought to be conformed to Things, should be so too, (I mean) in their Signification” (E 3.3.1, 409).

While such a language would seem to be the natural corollary to Locke’s empiricist view of the origin and nature of ideas, Locke discarded it on the grounds that it would require prodigious memory (which no human possesses)<sup>2</sup> and that it would have to be infinite, as well as useless as means of communication (which he takes to be the essence of language) (E 3.3.3, 409-410).<sup>3</sup> Funes, who had no deficiency of memory but, if anything, of forgetfulness, and who was endowed with perfect sensation as well as reflection, rejected Locke’s idea on somewhat different grounds: he considered it too general, too ambiguous.

Not only was it difficult for him to see that the [general] term ‘dog’ indicates so many distinct individuals of diverse size and form; he could not see why the “dog” of three fourteen in the afternoon, seen in profile, should be indicated by the same noun as the “dog” of three fifteen, seen frontally. His own face in the mirror, his own hands, surprised him every time he saw them.

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1. Borges goes on: “Babylon, London and New York overwhelmed the imaginations of men with their ferocious splendor; but no one in their populous towers and urgent avenues has felt the heat and pressure of a reality as (relentless) as that which day and night converged upon the hapless Ireneo in his poor south American farm” (Borges J. L., 1962, 66).

2. “[...] it is beyond the Power of humane Capacity to frame and retain distinct *Ideas* of all the particular Things we meet with: every Bird, and Beast Men saw; every Tree, and Plant, that affected the Senses, could not find a place in the most capacious Understanding” (E 3.3.2, 409).

3. “Men would in vain heap up Names of particular Things, that would not serve them to communicate their Thoughts [...]. This cannot be done by Names, applied to particular Things, whereof I alone having the *Ideas* in my mind, the Names of them could not be significant, or intelligible to another, who was not acquainted with all those very particular Things, which had fallen under my Notice” (E 3.3.3, 409-410).

With no effort, Funes learned English, French, Portuguese and Latin. But, as Borges remarks, it is unclear whether he was capable of thought. For to think is to forget differences, to generalize, to abstract. In the overly replete world of Ireneo Funes there were nothing but particulars, virtually *immediate* particulars (Borges J. L., 1962, 136).

Since Locke is very clear that all things, that exist are particular (E 3.3.1, 409) and, since he is as clear that the only sources of our ideas are sensation and reflection (E. 2.1.2-5, 104-106), and that “particular ideas [are] being taken from particular things (E. 2.11.9, 159)”, it would seem that something like Funes’ mind (or his infinite storage of distinct images) would be the logical consequence of Locke’s empiricism, as well as the only adequate representation of the world. In other words, the language Locke projects, a language in which there is one-to-one correspondence between particular things, particular ideas and their names would be the only adequate language for representing the true nature of the world (if only it were a language at all). Locke writes :

it is necessary, in the Application of Names to things, that the Mind should have distinct *Ideas* of the Things, and retain also the particular Name that belongs to every one, with its peculiar appropriation to that *Idea*. But it is beyond the Power of humane Capacity to frame and retain distinct *Ideas* of all the particular Things we meet with : every Bird, and Beast Men saw ; every Tree, and Plant, that affected the Senses, could not find a place in the most capacious Understanding (E 3.3.2, 409).

Locke is acutely aware that, “*It is impossible, that every particular Thing should have a distinct peculiar Name*” (E 3.3.2, 409), though we should note that this means “humanly impossible”. For Ireneo Funes, not only is it possible but rather necessary. In addition, Locke observes that, the greatest part of words in our language are not particular but general. He further claims that, “which has not been the Effect of Neglect, or Chance, but of Reason, and Necessity” (E 3.3.1, 409).

## 2. Locke's Notion of Abstraction

In Book 2, chapter 9, Locke explains the reason why most of terms in our language are general and how such “*general Words come to be made*” (E 3.3.6, 410) :

[T]he Mind makes the particular *Ideas*, received from particular Objects, to become general ; which is done by considering them as they are in the Mind such Appearances, separate from all other Existences, and the circumstances of real Existences, as Time, Place, or any other concomitant *Ideas*. This is called *ABSTRACTION*, whereby *Ideas* taken from particular Beings, become general Representatives of all of the same kind ; and their Names general Names, applicable to whatever exists conformable to such abstract *Ideas* [...]. Thus the same Colour being observed to day in Chalk or Snow, which the Mind yesterday received from Milk, it considers that Appearance alone, makes it a representative of all of that kind ; and having given it the name *Whiteness*, it by that sound signifies the same quality wheresoever to be imagin'd or met

with ; and thus Universals, whether *Ideas* or Terms, are made [in the human understanding] (E 2.11.9, 159).

Locke's notion of abstraction, leading from particulars to the production of general terms, is in fact more complex and is further explained in Book 3, chapter 3. In the process of abstraction, we start with particular ideas, compare them, retain some of their common features, and *leave out* (E 3.3.7-9, 411-412) that which is peculiar to each one of them – and this peculiarity of individual ideas is what we abstract from. As he writes :

let any one reflect, and then tell me, wherein does his *Idea of Man* differ from that of *Peter*, and *Paul*; or his *Idea of Horse*, from that of *Bucephalus*, but in the leaving out something, that is peculiar to each Individual; and retaining so much of those particular complex *Ideas*, of several particular Existences, as they are found to agree in? (E 3.3.9, 412).

According to Locke, abstraction consists in *leaving out* that which is peculiar to each individual and retaining something that is common to a number of them – that is, a common denomination of them.<sup>4</sup> The process consists in comparing individuals under different aspects. Every aspect or denominator of a group of individual ideas gives rise to a general idea in our minds.

The process of abstraction does not terminate at the first level of generality (or at the level of the first genus); rather, the very structure of ignoring or leaving out differences and abstracting away from the terms at the first level of generality continues to form higher levels of generality which are denoted by more general terms. Locke continues the above passage as follows :

Of the complex *Ideas*, signified by the names *Man*, and *Horse*, leaving out but those particulars wherein they differ, and retaining only those wherein they agree, and of those, making a new distinct complex *Idea*, and giving the name *Animal* to it, one has a more general term, that comprehends, with *Man*, several other Creatures (E 3.3.9, 412).

The same process of leaving out differences is now iterated and proceeds to form a still higher level of generality :

Leave out of the *Idea of Animal*, Sense and spontaneous Motion, and the remaining complex *Idea*, made up of the remaining simple ones of Body, Life, and Nourishment, becomes a more general one, under the more comprehensive terms, *Vivens*.

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4. For example, "the Names of *Nurse* and *Mamma*, the Child uses, determine themselves to those Persons. Afterwards, when time and a larger Acquaintance has made them observe, that there are a great many other Things in the World, that in some common agreements of Shape, and several other Qualities, resemble their Father and Mother, and those Persons they have been used to, they frame an *Idea*, which they find those many Particulars do partake in; and to that they give, with others, the name *Man*, for Example. And thus they come to have a general Name, and a general *Idea*. Wherein they make nothing new, but only leave out of the complex *Idea* they had of *Peter* and *James*, *Mary* and *Jane*, that which is peculiar to each, and retain only what is common to them all" (E 3.3.7, 411).

And [...] by the same way the Mind proceeds to *Body*, *Substance*, and at last to *Being*, *Thing*, and such universal terms, which stand for any of our *Ideas* whatsoever (E 3.3.9, 412; see also E 3.3.8, 411-412).

It should be clear now why Funes, who is, in a sense, a living form of Locke's radical empiricist' ideal illustrates, at the same time, the empiricist's worst nightmare. Having perfect recall of all his particular ideas, Funes cannot forget any difference between them and cannot leave out any dissimilarity between them. For this reason, he cannot abstract away from them, cannot generalize, and cannot form general ideas. He cannot see particulars under a common denominator because he sees each one of them in its fullest detail and as entirely distinct from all others. This is why Funes assigns each number an entirely distinct name. And this is why he also cannot see individual ideas under any common measure, as commensurable, and can hardly be said to have concepts and to think. The devastating consequences of such a mind clearly motivate Locke's theory of abstraction. Something like Funes' mind and the Funesian language serves Locke as a kind of *reductio* argument of his own radical empiricism (presented in E 2.1, 104-118) – an empiricism that he goes on to qualify and refine in the development of his *Essay*.

### 3. *Genera, Species, and Classification*

What emerges from Locke's account of abstraction and generalization is a deflationary account of genera and species through the composition of concepts, which aims at recasting the old Scholastic metaphysical approach and terminology with a new epistemological approach and common sense jargon. Locke concludes the above passage as follows :

this whole *mystery* of *Genera* and *Species*, which make such a noise in the Schools, and are, with Justice, so little regarded out of them, is nothing else but abstract *Ideas*, more or less comprehensive, with names annexed to them. *In all which, this is constant and unvariable, That every more general term, stands for such an Idea, as is but a part of any of those contained under it* (my italics, E 3.3.9, 412).

We can clearly see now that Locke's notion of abstraction is not a piece of marginalia; rather, it constitutes the foundation for his view of classification – the way we sort things out according to various general, or, as Locke aptly calls them, sortal terms. In fact, it is more accurate to say that, for Locke, the very process of abstraction is a process of classification. The production of general terms is a production of a language that functions as a sorting system, a system that classifies individuals according to their common denominations. As Locke puts this,

That [...] which general Words signify, is a sort of Things; and each of them does that, by being a sign of an abstract *Idea* in the mind, to which *Idea*, as Things existing are found to agree, so they come to be ranked under that name; or, which is all one, be of that sort. Whereby it is evident, that the *Essences* of the *sorts*, or (if the Latin

word pleases better) *Species* of Things, are nothing else but these abstract *Ideas* (E 3.3.12, 414).

[T]he *Essence* of each *Genus*, or Sort, comes to be nothing but that abstract *Idea*, which the General, or *Sortal* [...] Name stands for (E 3.3.15, 417).

This is what Locke calls a *nominal essence*. In his attempt to deflate the Scholastics' metaphysical approach, Locke stresses that, "*General and Universal*, belong not to the real existence of Things; but *are the Inventions and Creatures of the* [human] *Understanding*" (E 3.3.11, 414). Since all abstract and general terms are grounded in or derivable from the real natures of individual things (i.e., in their real essences, as distinct from their nominal essences), Locke – and certainly some of his commentators – overstate this point. In fact Locke's position is more subtle: while universals and general terms are grounded in the nature of individual things, they are not fully determined by them (see E 4.4.12, 568). This is the case since there are many aspects under which individuals could be compared, denominated, grouped and sorted out.

The somewhat arbitrary nature of classification is nicely brought out in

a certain encyclopedia called the *Heavenly Emporium of Benevolent Knowledge*. In its distant pages it is written that animals are classified into (a) those that belong to the emperor; (b) embalmed ones; (c) those that are trained; (d) suckling pigs; (e) mermaids; (f) fabulous ones; (g) stray dogs; (h) those that are included in this classification; (i) those that tremble as if they are mad; (j) uncountable ones; (k) those drawn with a very fine camel's hair-brush; (l) etcetera; (m) those that have just broken out of the flower vase; (n) those that at a distance resemble flies.

One suspects that the author of this list is no other than J. L. Borges who cites it in his piece on Wilkins' Analytical Language (Borges J. L., 2000, 231).

This classification of animals, however ridiculous, is not absurd; rather, given Locke's notion of abstraction, we can make sense of it. There are many ways and many categories according to which we could sort out animals. The point can be illustrated by examples from actual and historical encyclopedias that employ different classification systems. For example, consider a DNA-based classification as opposed to classification based on form and external similarity.

In the picture Locke draws, individuals, rich with properties, are presupposed to exist independently of our perception of them; universals, while grounded in the nature and inner constitution of individuals, are generated in the human mind as resemblances among them but admit certain degrees of freedom, so that we have some choice or "voluntary imposition" – to some extent arbitrary, but certainly not unconstrained – in their classification.

While Locke's notion of abstraction and generalization involves many difficulties and complications (especially its relation to the distinction between primary and secondary qualities), the conclusion I wish to draw from this section is rather

straightforward. What clearly emerges from the discussion above is that, according to Locke, universals are produced by human operations of abstraction from and composition of individual ideas, and this is based on the assumption of such rich individuals.<sup>5</sup> The point I wish to stress is that, in Locke, the direction of composition proceeds from the assumption of individuals to the construction of universals. In the next section, I will suggest that Leibniz presupposed a different context in which this order is inverted: individual concepts are produced in God's mind on the assumption of universal concepts. This difference stems from Leibniz original doctrine that each individual is represented in God's mind by a complete concept prior to its creation. For Leibniz, individual concepts are conceived as unique combinations of universal concepts. As it turns out, this view of individuals is compatible with Locke's notion of generalization in the human mind. It is important to note that Leibniz does not state this view explicitly in the *Nouveaux Essais*. Rather, it is a view that he developed early in his career and it informs some of his arguments against Locke.

#### 4. Leibniz's Response

Let us first take note of some indications in our text. In his response to E 3.1.3, Leibniz makes two interesting points: (1) He writes that,

if by 'particular things' you mean the lowest species (*species infimæ*), then, apart from the fact that it is often difficult to determine them, it is obvious that they are themselves universals, founded on similarity (NE 3.1.3, A VI vi, 275).<sup>6</sup>

In the rest of this paragraph, Leibniz seems to concur with Locke's notion of abstraction except for pointing out that the lowest species (such as Locke's thing, or being), "though they have a wider spread over individuals with which they agree, carry a lighter load of ideas and essences". Leibniz presumption here is that the more universal a concept is, the 'lower' it is, in the sense that the less content it has. By extrapolation, individual concepts would be the richest in content – a presumption that will be verified in the text.

(2) Leibniz notes that "it is certain that all proper or individual names were originally appellative or general". He develops this point in his response to E 3.3.5, where he gives a good number of examples:

we know that Brutus was given this name because of his apparent stupidity, that Cæsar was the name of the child delivered through an incision in his mother's abdomen, that Augustus was a name expressing reverence, that Capito and Bucephalus

5. As Guyer remarks, "the premise that only particulars exist in nature is the basis for all Locke's ensuing argument" (Guyer P., 1994, 126).

6. "si par les choses particulières on entend les plus basses espèces (*species infimas*), outre qu'il est difficile bien souvent de les déterminer, il est manifeste que ce sont déjà des universaux, fondés sur la similitude".

both mean big-headed, that Lentulus, Piso, and Cicero, were names originally given to those who grew only certain kinds of vegetables, I have already said what the names of the rivers, Rhine, Ruhr, Leine, and Oker signify (NE 3.3.5, A VI vi, 288-289).<sup>7</sup>

While Leibniz's insistence and elaboration of this point may seem odd, I think that what he has in mind is this : since names are supposed to be indicative of individual ideas, it is significant that they derive from general, appellative terms. This would be an indication that this may be true in the case of individual ideas as well, that is, that they, too, derive from universals.

Leibniz's first substantive point against Locke's theory of generalization concerns abstraction from time and place. Leibniz remarks that, "place and time, far from being determinants by themselves, must themselves be determined by the things they contain" (NE 3.3.6, A VI vi, 289).<sup>8</sup> But, he goes on, "the most important point in this is that individuality involves infinity and only someone who is capable of grasping the infinite would know the principle of individuation of a given thing" (NE 3.3.6, A VI vi, 289-290).<sup>9</sup> We know from earlier texts, notably the *Discours de métaphysique*, that, for Leibniz, to grasp the principle of individuation of a given thing is to grasp its complete concept. We also know that this surpasses human capability and that it is only possible for God. As the case of Martin Guerre shows (NE 3.3.8, A VI vi, 290), humans can even be mistaken about identifying an individual they know well.

Thus, while Locke and Leibniz agree that true beings are individuals, they disagree on how they are to be defined and individuated. They also agree that "generality consists in the resemblance of singular things, and that this resemblance is a kind of reality" and that "these resemblances are the foundation for our general terms" (NE 3.3.12-13, A VI vi, 292). Their agreement breaks down, however, when the question of essence (and more particularly that of individual essences) comes up. Leibniz is willing to go with Locke's deflationary account of sortal terms, but he cannot accept a reduction of the nature of concepts to anything that happens or does not happen in the human understanding or, more precisely, any contingency in the actual world. He writes :

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7. "on sait que le premier Brutus eut ce nom de son apparente stupidité, que César était le nom d'un enfant tiré par incision du ventre de sa mère, qu'Auguste était un nom de vénération, que Capiton est grosse tête, comme Bucéphale aussi, que Lentulus, Pison et Cicéron ont été des noms donnés au commencement à ceux qui cultivaient particulièrement certaines sortes de légumes. J'ai déjà dit ce que signifient les noms de ces rivières, Rhin, Ruhr, Leine, Oker".

8. "le lieu ou le temps, bien loin de déterminer d'eux-mêmes, ont besoin eux-mêmes d'être déterminés par les choses qu'ils contiennent".

9. "Ce qu'il y a de plus considérable en cela est que l'*individualité* enveloppe l'infini, et il n'y a que celui qui est capable de le comprendre qui puisse avoir la connaissance du principe d'individuation d'une telle ou telle chose".

man's combining or not combining such and such ideas – or indeed their being or not being *actually* combined in *nature* – has no bearing on essences, genera and species, since they depend only upon possibilities, and these are independent of our thinking (NE 3.3.14, A VI vi, 293).<sup>10</sup>

As Leibniz makes clear, “essence is nothing but the possibility of the thing under consideration. And something which is thought possible is expressed by a [real] definition” (NE 3.3.15, A VI vi, 293).<sup>11</sup> “Essences are everlasting because they only concern possibilities” (NE 3.3.19, A VI vi, 296). In Leibniz's response here, it is clear that he draws on his views on possibility, in general, and on his definition of possible individuals in terms of their complete concepts, in particular.

When we consider some of Leibniz's earlier presuppositions concerning possibility, his theory of real definition, and his definition of possible individuals as complete concepts, there emerges a picture in which universals are assumed and individual concepts arise as a result of their combinations. Since I discussed Leibniz's view of the composition of individual concepts elsewhere, I will be very brief here.<sup>12</sup>

That Leibniz holds that individuals are individuated through concepts so complete that include all their predicates is evident (e.g., DM § 8, § 13) and I will take it for granted here. That he sees such individual concepts as combinations of attributes is also clear in some earlier texts. He writes, for example, that,

There can be as many singular substances as there are diverse combinations of all compatible attributes. And this is the source of the principle of individuation, about which so many disputes took place among the Scholastics (A VI iv, 306).<sup>13</sup>

Leibniz considers such attributes as universal, in the sense that they figure in various individual concepts. This becomes evident when we recall his theory of real definition as a proof for the possibility of a given concept. Leibniz's formative and paradigmatic example of a real definition (which he suggests as replacement to Locke's notion of real essence) is his proof that the most perfect being, *Ens perfectissimum*, is possible.<sup>14</sup>

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10. “que les hommes joignent telles ou telles idées ou non, et même que la nature les joigne actuellement ou non, cela ne fait rien pour les essences, genres ou espèces, puisqu'il ne s'y agit que de possibilités, qui sont indépendantes de notre pensée”.

11. “L'essence dans le fond n'est autre chose que la possibilité de ce qu'on propose. Ce qu'on suppose possible est exprimé par la définition; mais cette définition n'est que nominale, quand elle n'exprime point en même temps la possibilité, car alors on peut douter si cette définition exprime quelque chose de réel, c'est-à-dire de possible”.

12. Nachtomy O., 2002, 31-58.

13. “Item tot posse esse substantias singulares quot sunt diversae combinationes omnium attributorum compatibilium. Et hinc patet principium individuationis, de quo irritae habentur multorum Scholasticorum concertationes”.

14. “A real definition is one according to which it is established that the defined thing is possible, and does not imply a contradiction. For if this is not established for a given thing, then no reasoning can be

In the context of this proof and related texts, Leibniz presupposes certain logical simples, which he identifies with the attributes of God and which constitute the basic level for the composition of concepts in God's mind. Possibilities are defined as consistent combinations of such simple and universal attributes, resulting in complex concepts. Individual concepts are defined as unique and maximally consistent structures of such attributes (or predicates) – both simple and complex – united by their principle or method of composition – in short, their unique production rule. In this picture, God's simple forms hold a one-to-many relation to individual concepts. And, in this sense, Leibniz conceives of individual concepts as complex combinations of universal forms or predicates.<sup>15</sup>

In a revealing article, *Elements of a Calculus* (*Elementa calculi*, April 1679, A VI iv, 195-205; C, 49-57; LP, 16-24), Leibniz discusses the classification and analysis of “universal concepts, i. e., ideas, and their combinations” (A VI iv, 200; C, 53; LP, 20). As I noted earlier, the ‘combination of universal concepts’ results in complex concepts. Leibniz's following remark reveals that the increase of complexity in concepts contributes to their individuality:

So I say that gold is greater than metal, since more is required for the concept of gold than for that of metal and it is a greater task to produce gold than to produce simply a metal of some kind or other. Our language and that of the Scholastics, then, is not contradictory here, but it must be distinguished carefully (A VI iv A, 200; C, 53; LP, 20-21).<sup>16</sup>

In Leibniz's model, the terms ‘matter’, ‘solid’, ‘metal’ and ‘gold’, denote universal concepts included in a more particularized concept: the concept of matter is included in the concept of a solid; the concept of a solid in the concept of metal; and the concept of metal in that of gold; and all the above are included in the concept of a particular golden thing. While the universal concepts are combined in various ways, individual concepts are formed as a unique combination and internal organization of universal concepts. In turn, universal concepts figure as the predicates of an individual concept (e. g., ‘metallic’ in a golden ring).

The context makes it very clear that Leibniz's discusses here the composition of concepts of metals rather than the composition of real metals. When Leibniz says

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14. (suite) safely taken about it, since if it involves a contradiction, the opposite can perhaps be concluded about the same thing with equal right. And this was the defect in Anselm's demonstration, revived by Descartes, that the most perfect or the greatest being must exist, since it involves existence. For it is assumed without proof that a most perfect being does not imply a contradiction; and this gave me occasion to recognize what the nature of real definition was” (Arthur R., 2001, 305-307).

15. In other contexts, Leibniz discusses this point under the terminology of ‘abstracts’ for universals and ‘concretes’ for particulars. See A VI iii, 169-188 where he identifies the abstract with “simple incomplete” and the concrete with “composed (or complex) complete”.

16. “Itaque dico *aurum* majus *metallo*, quia plura requiruntur ad notionem auri quam metalli, et majus opus est aurum producere, quam metallum quaecunque. Nostræ itaque et scholarum phrases hoc loco non quidem contradicunt sibi, distinguendæ sunt tamen diligenter”.

that “it is a greater task to produce gold than some kind of metal”, he is not making a point in alchemy, or a remark on manufacturing gold; rather, it is a remark about the composition of concepts in God’s mind. Since the concept of gold is more inclusive and more complex, it is also more particular than the concept of metal. Since the concept of gold includes some universal concepts that distinguish it from the concept of metal, it is more particular.<sup>17</sup> As he clarifies,

The concept of metal, regarded absolutely and taken in itself, does not involve the concept of gold; for it to do so, something must be added. This ‘something’ is the sign of particularity; for there is some certain metal which contains the concept of gold.

[...] although metal does not by itself contain gold, nevertheless some metal, with some addition or specification (e. g., ‘that which makes up the greater part of a Hungarian ducat’) is of such a nature as to involve the nature of gold (A VI iv, 198-199; C, 51-52; LP, 19).<sup>18</sup>

As we can see in these passages, Leibniz is assuming that the addition of certain concepts produces a specification and particularization of a complex concept. In this way, the more complex a concept, the more specifying predicates and distinctive features it has, as we have seen in his response to Locke.

Let me summarize this section. According to Leibniz, possibilities are situated in a conceptual realm of God’s thoughts and are seen as consistent thoughts in God’s mind. Consistent thoughts are explicated in terms of complex concepts. Complex concepts consist of simpler predicates or terms, so that consistency relations hold between their terms. Leibniz’s definition of possibility in terms of self-consistency implies that possibility pertains to concepts and more precisely to complex concepts, consisting of simple terms. Indeed Leibniz presupposes logical simples, which are indefinable and unanalyzable.<sup>19</sup> He identifies these logically simple elements with God’s attributes or God’s simple Forms. At the same time, God is seen not merely as “the subject of all simple forms” but also as an active mind who thinks the combinations among his simple forms, so that more and more complex concepts arise in his mind. This implies that God combines the simple forms in a natural order – from the simple to the complex, and that the more complex and rich a concept is, it also becomes more specified and individual. While Leibniz does not present

17. See NE 4.17.8, A VI vi, 486.

18. “Ita notio metalli absolute spectata et in se sumta non involvit auri notionem; et ut involvat addendum est aliquid. Nempe signum particulare: quoddam metallum, est enim certum quoddam metallum quod auri notionem continet”; “[...] licet enim metallum per se non contineat aurum tamen quoddam metallum cum addito seu speciale (exempli causa id quod majorem ducati Hungarici partem facit) ejus naturæ est, ut naturam auri involvat”.

19. Leibniz often remarks in his Paris notes that the simple elements are unanalyzable and indenable (A VI iv A, 572); that “there are necessarily simple forms” (A VI iv, 514); and that “nothing can be said of forms on account of their simplicity” (A VI iv, 514; LP, 69).

these suppositions in our text, they clearly inform his response to Locke's attempt to reduce essences and concepts to abstractions in the human understanding.

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According to Locke, individual ideas correspond to individuals but general ideas do not correspond to universals. There are no universals in nature, only particulars or individuals. Universals, indicated by general terms, are but common denominators of particular things, which we produce by abstraction and use as sortal terms and as means of communication. According to Leibniz, individual concepts correspond to possible individuals (but also to some realized ones); and universal concepts (or terms) correspond to the predicates (or the constituents) of such individual concepts. Both Locke and Leibniz held a generative theory of the composition of concepts (or ideas) yet they conceived the composition of concepts in different contexts and in inverse directions. While, for Locke, universals are produced by abstraction from individuals in the human mind, for Leibniz, individual concepts are produced by composition of universal ones in God's mind. Yet, it is also for this reason that Leibniz believed that their views can be made compatible: one would have to supplement Locke's view of the production of general concepts in the human understanding with Leibniz's view of the production of individual concepts in God's mind.