

Questions of Race in Leibniz's Logic

This essay is part of larger project in which I attempt to show that Western formal logic, from its inception in Aristotle onward, has both been partially constituted by, and partially constitutive of, what has become known as racism. More specifically, (a) racist/quasi-racist/proto-racist political forces were part of the impetus for logic's attempt to classify the world into mutually exclusive, hierarchically-valued categories in the first place; and (b) these classifications, in turn, have been deployed throughout history to justify and empower racism/quasi-racism/proto-racism. In other words, (a) an important part of the chaos and messiness that so troubles logic has been the natural bio-cultural diversity of human beings as described by concepts such as race and ethnicity; and (b) once these concepts were historically in place, taken for granted, buttressed with pseudo-science, and had their origins forgotten, they became tools for the oppression of diverse human groups.

The central thesis of this essay is that close readings of a variety of Leibniz's writings (including several essays and one letter) will reveal a pattern of mutual dependency and creation in regard to logic and racism in Leibniz. My conclusion will be that there is a meaningful connection between logic and racism (or at least between logic and politics in general) in Leibniz such that one should be skeptical of his logic's claim to offer transparent and neutral descriptions of the world as well as imperatives for action. Put differently, I want to ask the following specific question: how do Leibniz's own racially-informed political goals, along with the emergence of race-centric European colonialism, both invest and disguise themselves within Leibniz's mathematizing of logic?

Before going any further, it is important that I address what exactly I mean by the terms "race" and "racism." Coming from a generally postmodern philosophical framework, and

understanding (at least social) reality as being socially constructed, I do not personally recognize the concept “race” as any more metaphysically real than the concepts “man,” or “justice,” or for that matter even the concept of “reality” itself. However, I also do not consider the concept of “race” to be any *less* real than “man,” “justice” or “reality.” Consequently, it makes no difference to me or this project whether Leibniz is most “accurately” described as a “racist,” or a “quasi-racist,” or perhaps instead a “proto-racist.” What matters to me, rather, is that I believe I have identified a pattern of thinking, a template for carving up the world linguistically and conceptually that goes all the way from Aristotle to contemporary racism.

I would have no objections if the reader wishes to further carve up this prejudicial or discriminatory thinking into, for example, “proto-racism” in Aristotle, “quasi-racism” in the medievals, and then “racism” proper in Leibniz and Frege. Nor, of course, would I object to the reader following my own, idiosyncratic, broader use of the term “racism,” which includes all these varieties of prejudicial or discriminatory thinking. In any event, I do not believe that my arguments, or their persuasive force, should be informed in the least by this question of labels. Nevertheless, in case the reader would prefer a formal definition of the terms, I offer the following. Race, as I will use it throughout this essay, means a group of people defined historically by some form(s) of bio-cultural characteristics. By racism, then, I will mean prejudicial or discriminatory treatment (in thought, feeling, word and/or action) in regards to such bio-culturally historically defined groups and their members.

Leibniz lived during the first historical era in regards to which at least some philosophers are willing to acknowledge racism exists. The historical events required for this begrudging acknowledgment, unfortunately, were nothing less than the near-genocide of the people inhabiting almost a quarter of the globe (North America) and the enslavement of those living on

another quarter (South America). The relationship of these events, specifically the Spanish conquest of the Western hemisphere, to Aristotle's theory of natural slavery is the subject of a little-read 1959 historical study by Lewis Hanke. It is through a discussion of this book, ultimately, that I will transition to a discussion of central philosopher in this essay, Gottfried Leibniz.

I. Hanke on Leibniz's sociopolitical context

Aristotle and the American Indians: A Study in Race Prejudice in the Modern World tells its story (on a model increasingly popular today, as evidenced by nonfiction studies such as *Wittgenstein's Poker* and *Rousseau's Dog*) almost entirely through the lens of one brief historical encounter between two public intellectuals. In this case, that encounter is a debate in 1550 between the Spanish Dominican "Apostle to the American Indians," Bartolomé de Las Casas, and the reigning Aristotle scholar of his day, Juan Ginés de Sepúlveda. And the central feature of that debate, for Hanke, is the latter's explicit use of Aristotle's theory of natural slavery to justify pre-missionary warfare against the Native Americans.

Hanke's "Introduction" begins by repeating a version of the dogma that the reader has observed repeatedly being expressed by the Aristotelian scholars. "Generally speaking," Hanke claims, "there was no true racial prejudice before the fifteenth century, for mankind was divided not so much into antagonistic races as into 'Christians and infidels'" (ix). At least Hanke uses here the weaker formulation, "not so much," which seems appropriate given the fact that the religious division between Christians and (especially) Muslims maps very closely onto the racial/ethnic division between Caucasians and Arabs. I believe that my later analyses of Leibniz will shed light on this issue.

In chapter one, Hanke states in simple terms the relationship he finds between Aristotle and late medieval/early modern thought. “Aristotle’s authority remained so strong among Christian thinkers that some eminent Spaniards did not hesitate to apply his doctrine of natural slavery to the Indians” (1). But Aristotle was not, Hanke adds, the only major influence on Spanish conceptions of the Western hemisphere. Medieval influences were also critical. “The Spaniards who actually saw America not only became tremendously excited and stimulated but they tended to look at the New World through medieval spectacles,” particularly “during the early years of the discovery and conquest” (3). More specifically, the Europeans were “expecting to encounter many kinds of mythical beings and monsters depicted in medieval literature” (3).

To take one example, Augustine, “in his *City of God*,” Hanke writes, “had a whole chapter on ‘Whether the descendants of Adam or the sons of Noah produced monstrous races of men’” (3-4). The existence of “wild men,” too, according to Hanke, “had captured popular imagination during the Middle Ages” (4). On a more sinister note, “The Devil himself was to be found, some believed, on a certain island in the Caribbean Sea,” which in light of the later slave revolution that took place on the island nation of Haiti would probably have to be Hispaniola (5).

Unfortunately for the indigenous peoples of the Americas, opinions soon changed, in a way that prefigures Leibniz’s part in my larger narrative. “The popular image, in the first feverish months, of a terrestrial paradise was soon succeeded by that of a hostile continent peopled with armed warriors rushing out” in order to “resist the advances of the Spanish soldiers and the missionary efforts of their companion friars” (6). Here, then, was one important justification for the violence, enslavement and even genocide perpetrated against of the

American Indians: some of them refused to convert to Christianity, and some of those non-converters resisted with violence.

In the fateful year of 1492, not only did Columbus set out for his encounter with the American continents and peoples, but “Granada, the last of the Moorish kingdoms, fell to the Catholic Kings Ferdinand and Isabella,” and also “the Jews were expelled” from Spain (8). In other words, three large and dramatic race-events happened all in one year, two of which involved the racial purification of Spain from Jews and Arabs, and one of which involved the precursor to the most widespread racial genocide and assimilation in human history. And as if that were not enough, there was also one important, albeit much smaller, race-related event in that year. Isabella, Hanke tells us,

bluntly asked the scholar Antonio de Nebrija, as he presented to her his Spanish *Gramática*, the first grammar of a European modern language ever written: “What is it for?”, and the Bishop of Avila, speaking on behalf of the scholar, replied: “Your Majesty, language is the perfect instrument of empire” (8).

Note the remarkable, apparent coincidence. The political expulsion of the Moors, the racial banishing of the Jewish people, and the writing of the first ever modern European grammar, all in the same year. And grammar and logic are significantly overlapping concepts, as suggested in part by the OED. One definition there of “logical” is “That follows as a reasonable inference or natural consequence; that is in accordance with the 'logic' of events, of human character.” In this way, the metaphorical meaning of logic, namely the order or structure of a discourse, is incorporated into the literal definition of its adjective. Similarly, one of the meanings of “grammar” there is “The fundamental principles or rules of an art or science.” At this level then, logic and grammar are nearly identical, in that they are the ordering rules of a discourse or

science. It is in this sense that I suggested to my own General Logic students that logic can be understood as the form or language of thought. Put in the language of the current comparison, insofar as grammar is the form of language, the ways it structures how expression and thought take place within it, then logic is also the grammar of thought. .

If this is true, then the first modern European grammar was also in a sense the first modern European logic, and what occurred in 1492 was the creation and/or formalization not only of a grammar, but also a logic, in order to conquer and subjugate entire nations. In that way, logic not only *is*, but is *self-consciously developed and presented as*, a weapon of war. Abelard's combative vision lives on. The Spanish did not depend absolutely on the new grammar in order to speak or write Spanish, because they were learning from native speakers in their own homes and families. But with regard to the anticipated new subjects of the Spanish empire, such an invention could conceivably be extremely effective, because adopting the conqueror's language is both critical to the assimilation of the conquered civilization per se, and also facilitates conversion to the conqueror's religion, which is perhaps equally important for such assimilation.

Just in case their own self-interest was an insufficient motivation and/or justification for conquest, the Spanish also received the active support of the Catholic Church, in the form of "the famous bulls of donation of 1493," which "specifically entrusted to the crown of Castile the Christianization of these lands" (8). Consequently, Hanke concludes, "we may be clear that the Spaniards had, logically, to determine Indian nature and capacity before they could legitimately pursue either conquest or Christianization" (9). The ambiguity of this sentence leaves it open for interpretation as to whether "logically" refers to the necessity to "determine Indian nature" and/or the method whereby that determination took place. In either case, what is at issue, given

the quote above from Bishop Avila, is a double role for logic in the Spanish conquest. Logic was both (a) qua structure of the Spanish grammar, a weapon of conquest and (b) qua method of theoretical debate, a condition for the possibility of the use of that weapon.

Furthermore, within this ongoing debate, according to Hanke, even the pro-Indian hero, Las Casas, advanced racist claims and strategies, ironically in the interest of racial tolerance and equality. “Early in his career Las Casas proposed the introduction of Negro slaves to the islands, in order to spare the Indians the heavy labour which was destroying them” even though he “later repented” (9). Here again—the persistent clamor about color-blindness before the fifteenth century notwithstanding—there is reason to suspect that skin color might be playing a decisive role in the relations among Western Europeans and other peoples. I say this because both the Indians and the Africans were perceived as backwards, tribal peoples, with heathen religions, and both were shorter of stature and with broader noses on average than the average Caucasian, so perhaps the most striking difference was one, not only of physical appearance, but of skin color in particular. Though the American Indians were darker-skinned than the Europeans, they were not as dark as the Africans, and apparently seemed to the Spanish to lack what they perceived as the Africans’ animalistic, beast of burden capacities for grueling manual labor.

And despite Las Casas’ later change of heart, Hanke insists, “Spaniards never fought, however, as hard or as consistently against Negro slavery as well as Indian slavery, not even Las Casas” (9). How is one to account for this difference in treatment? Could it be the result of racial, and perhaps even specifically color, prejudice? Hanke himself uses the language of race in this context when he asserts at the end of this chapter that “Each man, each faction, held a profound conviction about the nature of the Indians and all generalized about them as though they were one race” (10). Surely this undermines the claim that what was going on during the

Spanish conquest was merely about religion and had nothing to do with race, and therefore perhaps indirectly undermines the similar claim about European/Afro-Arabic relations during the Middle Ages as well.

Chapter two of Hanke's book discusses the relationship between Aristotle and the Americas leading up to the fateful debate of 1550. He asserts that Las Casas' opponent in the debate, Sepúlveda, "not only sustained" Aristotle's theory of natural slavery "with great tenacity and erudition but also concluded that the Indians were in fact such rude and brutal beings that war against them to make possible their forcible Christianization was not only expedient but lawful" (13). Law, as for example in Aquinas' natural law theory, according to which human law should accord as much as possible with divine law, is supposed in Western culture to proceed along logical lines. And the language of the law aims to a discourse sufficiently clear and distinct so as not to impede the course of justice. With this law-logic connection in mind, one could paraphrase Hanke's previous point as follows: Sepúlveda asserted that the views of Aristotle lead, by the laws of logic (in argumentation) to an outcome that should be made into actual law (namely the legal permission for the king to conquer the Indians).

Buttressing this conclusion, undoubtedly, was the same frame of mind that I noted previously in Abelard's autobiography with respect to his leisurely lifestyle. "The town fathers of Buenos Aires," writes Hanke, "once informed the king [of Spain] that affairs were so bad there that Spaniards actually had to dig in the earth and plant crops if they were to eat" (14). And this was not an isolated incident. "Throughout the whole of the colonial period," Hanke asserts to the contrary, "and in all lands colonized by Spain this same attitude prevailed" (14). How is one to explain this aversion to manual labor that the Spanish exhibited in the Americas. Might it be related to an unyielding assumption of racial superiority to the indigenous peoples? I

make this suggestion because this attitude that the Spanish should not dig in the earth would have to have been specific to the Americas, otherwise no Spanish people would have been planting food back home in Spain and the entire country would have perished from collective starvation. And if racial superiority was in play in these circumstances, might the comparatively darker skin of those indigenous peoples served as a justification?

There were heroic exceptions, however, who attempted to combat this logic of racism, and it is interesting to note that in some cases they fought logical fire with logical fire.

Domingo de Santo Tomás announced, for example, in the prologue to his *Gramática, o arte de la lengua general de los indios del Perú* [*Grammar, or art of the language of the Indians of Peru*] that his principal intention was to demonstrate, by his account of the beauties and subtleties of their language, the falsity of the idea that the Peruvian Indians were barbarous (23).

There are several points worthy of consideration in this passage. First, this is an instance of another grammar, another logic, which explicitly opposes the explicit intentions of the Spanish grammar discussed above. One could think of Tomas' grammar, then, as a kind of logic of rebellion against the Spanish grammar, and perhaps even a logic that suggests the possibility for an eventual Peruvian liberation, since one facilitator of cultural and political independence is a common, indigenous language. Second, the emphasis on the beauty and aesthetics of Quechua [the dominant Peruvian language during the conquest] resonates with Aristotle's own emphasis on beauty as symptom of virtue and truth throughout his philosophy. This means that not only is Tomas using (Peruvian) grammar against (Spanish) grammar, and therefore logic against logic, but also (the aesthetic emphasis of) Aristotelianism against (the natural slavery theory of) Aristotelianism. Third, Hanke claims that Tomas wanted to refute the idea that the Peruvians

were “barbarous,” the adjectival form of “barbarians,” a keyword connected in the Middle Ages to Aristotle's theory of natural slavery, which suggests that Tomas may have had this theory in mind when composing his Peruvian grammar. Elsewhere, reminiscent of later Aristotelian logic such as that of Abelard, Tomas objects that the American Indians were being treated ““even worse than asses”” (27). Finally, this overall strategy bears a striking resemblance to others in twentieth century philosophy, such as that of Nietzsche and Derrida—namely, to champion the (especially aesthetic) virtues of the stigmatized member of an important dichotomy in Western history, such as good/evil (for Nietzsche) and speech/writing (for Derrida)—which inspired the larger project of which this essay is a part.

Chapter three of Hanke’s book proceeds to the immediate background of the debate, beginning with a portrait of Sepúlveda that shows him to be a direct descendant of the problematic Aristotelians in the Middle Ages, and a direct ancestor of the problematic Aristotelians of our own era. According to Hanke, Sepúlveda “possessed one of the best trained minds of his time, supported his views with many learned references, and enjoyed great prestige at court” and “had become one of the principal scholars in the recovery of the 'true' Aristotle” (31). Note again the intelligence, the consummate education, and the commitment to one unique truth, in a philosopher who appears likely entrenched in racism. If so, he probably came by this racism “honestly.” At the time of the debate, Sepúlveda had just completed and published at Paris in 1548 his Latin translation of Aristotle's *Politics*, which he considered his principal contribution to knowledge. It was the best translation that had appeared, and was recognized for centuries as an indispensable work (31).

Sepúlveda thus had Aristotle's theory of natural slavery fresh in his mind when he joined the debate with Las Casas in 1550, the setting of which is the subject of Chapter Four of Hanke's

text. “The disputants were to direct themselves,” Hanke writes there, “to the specific issue: is it lawful for the king of Spain to wage war on the Indians before preaching the faith to them in order to subject them to his rule, so that afterwards they may be more easily instructed in the faith?” (38). Sepúlveda's answer, of course, was yes, and he attempted to justify this answer, drawing on Aquinas' just war theory—“that wars may be waged justly when their cause is just and when the authority carrying on the war is legitimate and conducts the war in the right spirit and the correct manner”—on the following grounds:

1. For the gravity of the sins which the Indians had committed, especially their idolatries and their sins against nature.
2. On account of the rudeness of their nature, which obliged them to serve persons having a more refined nature, such as the Spaniards.
3. In order to spread the faith, which would be more easily accomplished by the prior subjugation of the natives.
4. To protect the weak among the natives themselves (41).

Aristotle's theory of natural slavery comes in, clearly, in reason 2, and notice its proximity to the religious justification in reason 3. There seems to be an implicit connection between being inferior and heathen, on the one hand, and being superior and Christian, on the other. Can one even imagine this argument having been made, for example, if the “rude”-natured Indians happened to already be Christians?

In his portion of the debate itself, Sepúlveda explains that “natural slaves” can refer to “persons of both inborn rudeness and of inhuman and barbarous customs” (44). Here the racist views of the American Indians are linked to a cultural critique that borrows Aristotle's term for ethnically different outsiders. Following Aristotle to the letter, Sepúlveda also argues that

“prudent and wise men have dominion over them for their welfare as well as for the service given to their superiors” (45). In justifying his claim of inherent Spanish superiority, Sepúlveda, for some strange reason, includes among his litany of their virtuous acts “the sack of Rome in 1527,” even though, as Hanke informs the reader, “according to “one modern historian, the city was subjected '...to horrors far more awful than those of barbarian days,’” (45). For example, “Monasteries and churches were burned, nuns violated” and “pregnant women were put to the sword,” (45). What makes this choice of references even more surprising is that Sepúlveda himself “had followed the army into Rome and could scarcely have been ignorant of what actually happened” (46).

Again returning to the details of Aristotle's thought in the actual debate, in the context of condemning the alleged cannibalism of the Indians, Sepúlveda noted that the Germans or “Scythians were cannibals, too,” but unlike the “cowardly” Indians “were fierce fighters” (46). Thus the Scythian-Ethiopian dichotomy also seems to have been a part of Sepúlveda's conceptual toolbox. Additionally, following Aristotle's hierarchy from the *Politics*, Sepúlveda asserted in front of the judges that “Indians are as inferior” as “children to adults, as women are to men” (47). That he was willing to advance these claims is even more surprising given that he had to have been aware of considerable empirical evidence to the contrary. Hanke observes that, although “the remarkable mathematical achievements of the Mayas or the art and engineering feats of the Incas were not understood then,” nevertheless “much information was available” (49). How, then, is one to account for Sepúlveda's irrational views regarding the intelligence and cultural sophistication of the Native Americans? Might racism be involved?

Sepúlveda held other problematic race-related views as well, as evidenced by his comparison of the Native Americans to the “Jews, whose 'extermination God desired because

their crimes and idolatry” (69). Extermination is an extremely strong word for Sepúlveda to use here, and it is made stronger still retroactively by the term “extermination camp” that entered the world's vocabulary in Nazi Germany. For this reason, perhaps, “One Guatemalan writer goes so far as to couple his name with that of Hitler as a proponent of repugnant racial doctrines” (95).

Despite the racist tenor of Sepúlveda's arguments, “The judges at Valladolid,” unfortunately “fell into argument with one another and reached no collective decision,” and according to Hanke, “The facts available do not support conclusively the claim to victory of either contestant” (74). Less than a century after this anticlimactic and indecisive end to the debate, another advocate of a holy Christian war against essentially inferior, darker-skinned peoples was born, in Leipzig, Germany. His name was Gottfried Wilhelm Leibniz.

Before examining Leibniz' own primary philosophical texts, I will begin my consideration of him with another book on the order of *Wittgenstein's Ladder* and *Aristotle and the American Indians*: Matthew Stewart's *The Courtier and the Heretic: Leibniz, Spinoza, and the Fate of God in the Modern World*. Its usefulness for my essay consists in its focus on Leibniz' political orientation, and, in particular, on his conservative Christian sympathies vis-a-vis the atheistic alternative of philosophers such as Spinoza. It should be noted, however, that Stewart's entertaining prose tends toward hyperbole and oversimplification, and thereby weakens a case already strongly supported by historical evidence.

But before taking even this step, in order to reassure the skeptical reader that there is in fact textual evidence for this general approach to Leibniz, I wish to briefly consider a short letter written by Leibniz to one of his many royal friends and benefactors. It is included in the Hackett anthology, *G.W. Leibniz: Philosophical Essays*, translated by Roger Ariew and Daniel Garber, and is titled there “Letter to Countess Elizabeth (?), on God and Formal Logic (1678)” (235).

II. Leibniz on his own sociopolitical context

In the second paragraph, Leibniz sets the tone of the entire letter by asserting that “the demonstration of God's existence and the immortality of our souls,” which he considers “the fruits of all our studies,” “constitutes the foundation of our greatest hopes” (235). His aim, which Stewart argues is always the case, is thus practical, not theoretical, which seems a bit surprising given the two aspects mentioned in the letter's subtitle, “God” and “Formal Logic.” Referring to inquiries such as the latter, one of “the rigorous sciences,” Leibniz describes them as “the touchstone of our thoughts. Everywhere the people flatter themselves and find flatterers, but there are very few mathematicians who have spread errors, and there are none who could get others to approve their mistakes” (236). This valorization of mathematics, of which the reader will soon observe many more examples in Leibniz, is probably his most distinctive and influential contribution to our larger narrative. Most importantly, this valorization seems to stem not from a love of the practice of mathematics for its own sake, as can be observed in professional mathematicians throughout history, but a pragmatic and nakedly self-serving utilization of mathematical theory.

When one reads here Leibniz' initial description of his interest in the subject as “an almost disproportionate passion,” one might be inclined to think he belongs more appropriately in the mathematics-for-its-own-sake category, but the next paragraph clears up this potential misconception. “As for myself,” Leibniz acknowledges frankly, “I cherished mathematics only because I found in it the traces of the art of *invention in general*” (237). He pursued mathematics, Leibniz tells the countess, “for the love of metaphysics,” which, he has concluded, is “scarcely different from the true logic, that is, from the art of invention in general” (237).

Note here, again, the seemingly redundant phrase “true logic,” indicating that Leibniz, like most of his medieval predecessors, claims to be advancing the art or science of thought which appeared already complete in its invention by Aristotle. He, too, is in the race for logical perfection.

But he does not stop with the identification—the form of all truth for Leibniz, as I will show—of logic and metaphysics; “in fact,” he asserts, “metaphysics is natural theology” (237). Here is where God enters the picture for Leibniz alongside logic. To recap this dizzying progress, math contains logic, which is the same thing as metaphysics, which is ultimately theology, the term Abelard popularized for the science of God. In brief, then, Leibniz pursued mathematics because he thought it led to God. And God, in turn, for Leibniz possesses one of the attributes most coveted by (and rarely granted to) logical entities. “This is because the idea of God contains within it absolute being, that is, what is absolutely simple in our thoughts, from which everything that we think draws its origin” (237). This connection highlights something that the reader may have overlooked above.

Identifying logic with the art of invention (*ars invendiendi*), and a logical attribute with a creator God, implies that logic is itself no longer a structure of thought, or a method of conceptual or linguistic analysis, but rather a creative enterprise capable of generating genuine novelty. This is an enormous increase in the perceived power and purview of logic in the history of Western thought. Another indication of this expansion can be found a few paragraphs later, when Leibniz asserts, contra Aristotle and the medievals, that “arguments in proper form do not always bear the stamp of *Barbara Celarent*,” the latter words being shorthand devised in the Middle Ages for particular kinds of Aristotelian syllogism (238). On the contrary, “I dare say,” Leibniz writes in a genuinely daring move, “that the account of the accountant and a calculation

of analysis are arguments in proper form” (239). In other words, mathematical reasoning is a species of logical reasoning, and thus not only is it the case that logic a part of mathematics, as Leibniz asserted previously in this letter, but (at least parts of) mathematics are themselves logic.

But if mathematics is logic, then the formalizations offered by Aristotle's syllogisms in his logical texts are ultimately insufficient. “That is why,” Leibniz proclaims, “I maintain that, in order to reason with evidence in all subjects”—including, thus, theological ones—“we must hold some consistent formalism [*formalité constante*]” (238). A more direct translation of the French might be “constant formality.” Aristotle's formality, the syllogisms, were supposed to be used only during arguments, at key moments in the lifelong process of intellectual inquiry. Leibniz's expanded sense of logic, however, requires much more. It requires a system, which, to paraphrase the previous quotation, is not only completely formal, but also permanently formal. “There would be less eloquence,” Leibniz concedes in regard to this proposal, “but more certainty” (239). Less beauty, more exact control. Less aesthetic value, but less anxiety in a less uncertain world.

But in order to determine the formalism that would do no less in metaphysics, physics, and morals, than calculation does in mathematics, that would even give us degrees of probability when we can only reason probabilistically, I would have to relate here the thoughts I have on a new characteristic [*characteristique*], something that would take too long (239).

This sentence, coming toward the end of the long final paragraph of the letter, in the context of Leibniz's typical interactions with royalty, seems in all probability a teaser, meant to stir the countess' curiosity about that in Leibniz's work which was to have the greatest influence on the history of logic—the universal characteristic.

Leibniz claims that this *characteristica universalis* would “represent our thoughts truly and distinctly,” and that “when a thought is composed of other simpler ones, its character would also be similarly composed (240). What “would follow from this perfection of the sciences,” Leibniz raves of himself, again returning to the theme of perfection, “would appear incredible” (240). That this characteristic was, according to Stewart, one of the “earliest ancestors” of the modern computer, would seem to bear out this conceit (12). But what seems to matter most to Leibniz lies somewhere else altogether, in “that the foundation of my characteristic is also the foundation of the demonstration of God's existence” (240). In this way, the countess and the reader are returned to the beginning of the letter, and Leibniz' “highest hopes.” And on that teasing note I leave Leibniz's own writings for now, to consider the life that both inspired the universal characteristic and tried to make of it, and thus of formal logic per se, a weapon for holy war.

III. Stewart on Leibniz's philosophy

War is also the topic that Stewart uses to begin the story of Leibniz's life, specifically The Thirty Years War. During this conflict, according to Stewart, “the population of Germany” alone “declined from 21 million to 13 million,” it “represented a catastrophe for intellectual life in the German lands, too” and the peace treaty that ended it became “known to contemporaries as the Peace of Exhaustion” (40). “It was amid such craving for a good night's sleep,” Stewart observes in his wry style, that “Leibniz first opened his eyes” (40). In this way Stewart sets up his argument that Leibniz was above all a peacemaker, seeking to end hostilities by any means necessary, no matter how insincere and duplicitous.

Leibniz's father “occupied a prestigious position in the town's theological infrastructure” and was “professor of moral philosophy at the University of Leipzig” (41). Leibniz was thus born, in a sense, into the priesthood in which all of the medieval philosophers lived, and when he entered that same university, at the ripe old age of fourteen, “he continued his intensive study of Aristotle and the scholastics” (43). Leibniz's doting father had died when Leibniz was only six, and according to Stewart, “he spend his entire life attached to one authority figure or another” (44). As for his treatment of those under his own authority, his longtime secretary and biographer “notes that toward his domestic servants he was 'inclined to fits of passion, but quickly pacified” (46). And Leibniz noted in himself that the “choleric tendencies,” or tendencies to anger, “seem to have the ascendancy” or dominant position in his temperament (47).

Leibniz's professional career began, oddly, with alchemy. He claims that, “baffled by their bizarre symbols and opaque texts,” “he composed a parody of their efforts, making incomprehensible claims by means of unintelligible symbols, and forwarded it to the president of the [alchemical] society” (48). Interestingly, this rhetoric could be similarly applied to Leibniz's own examples of philosophical shorthand, such as his *Monadology*. But it seems, as I will show below, most appropriate for his abortive attempts at the universal characteristic. In any case, the presumably clueless president of the alchemists offered Leibniz a job as secretary, and Leibniz took it. “In private however,” Stewart claims in opposition to Leibniz's version of this story, “he exhibited an avid interest in the subject throughout his life” (48). This is the first instance, and note that it is a double instance, of the deceptiveness that characterized Leibniz's professional activities throughout his life.

The second major instance of such deception, again connected to Leibniz's mathematical-logical methods, was a treatise his employer had him compose in support of “a German aspirant” to a recently-vacated Polish throne. Leibniz cooperated, and “demonstrated in quasi-geometrical fashion that [his employer] Boineburg's man had in his favor not just the genealogical tables, but also the accumulated wisdom of the greatest philosophers in history” (49). This, too, sounds like an apt description of the universal characteristic project, and is, furthermore, a case in which Leibniz as logician attempted to disguise a complex history in artificial abstractions for his own self-interest and political gain—the pattern I have suggested has been operative since the beginnings of formal logic in Aristotle. Additionally, given that the treatise “would be more likely to achieve its effect if it were believed to be the work of someone with a less German-sounding name,” Leibniz and his employer “put it out under the name of Georgius Ulicovius Lithuanus” (49). Ultimately, however, the German candidate was ultimately passed over for the throne. As these historical facts pile up, it seems that greater and greater distrust is appropriate regarding Leibniz, even though I have surveyed here only the first year of his long career.

As a transition between this biography and his own philosophical writings, I will now summarize how Stewart portrays Leibniz as a thinker in view of his life. He “turned to philosophy,” Stewart claims, “in order to solve *other* people's problems,” and the “maxim that guided him throughout his long and colorful life” was “Justice is the charity of the wise” (76, emphasis in original). An implication of these stances might be that Leibniz had (or believed he had) everything figured out for himself, and that ethical relationships among the community is the burden of those “wise” ones like himself, respectively. Consequently, in his “letters written to some person of importance,” which comprises most of his philosophical work, his goal “was not necessarily to reveal the truth, but to get something done” (77). And this something was

usually to achieve some kind of political peace, as evinced by Stewart's observation that, "Just out of his teenage years, he adopted the pseudonym Guilielmus Pacidius," translated roughly as Wilhelm Peace-God (78).

Moving on to the means whereby Leibniz attempted to refashion himself as a deity, which is the ultimate subject of this essay, Stewart remarks that Leibniz's universal characteristic "fascinates not on account of any results it achieved, but as an expression of a certain kind of aspiration" (79). This aspiration is political, and his politics "may ultimately be summed up," Stewart writes, "in one word: theocracy," an "ideal state" that "derives its legitimacy" ultimately "from the eternal truths established by philosophy" (80). One crucial phase in the establishment of this theocracy—and one which raises again the question of race in Leibniz's life and work—was a political and military campaign almost too outlandish to be believed, which Stewart refers to as "the Egypt Plan" (85).

In essence, the Egypt Plan proposed that the "German states could relieve themselves of the threat from France" by "persuading Louis XIV to divert his armies to the conquest of Egypt" (85). In addition to the fact that Egypt is on the continent that is home to the darkest-skinned peoples in the world, there were other potentially-racial dimensions to this plan. "Instead of Christians killing Christians," Leibniz argued, "Christians would be killing infidels," specifically the dark-skinned Muslims of North Africa (85). Along with its briefer title, "Leibniz also sometimes referred to his proposal as 'The Plan for a New Holy War'" (85). Leibniz the medievalist wanted nothing less than a new crusade.

But the philosopher that Stewart describes as desiring peace above all else seems to have been interested, at least initially, with peace among only the Europeans, and thus primarily among white people. Moreover, it seems likely that Leibniz was not even a Christian. His

secretary observed in his biography of Leibniz that he “rarely saw him in church, and he never knew him to take communion,” and that “the villagers and aristocrats” in the town he lived in for forty years called him “Loewenix, meaning 'believer in nothing'” (83). Nevertheless, Leibniz was so enthusiastic, in the literal sense of the word, about this idea that he even “composed a lavish poem to celebrate the impending crusade” (86). Perhaps he wanted, more than any thing else, to be in control, to rule as William Peace-God instead of serving the Christian one. A later maxim of Leibniz's seems suggestive on this point: “It is necessary to snare the world in the trap, to take advantage of its weakness, and to deceive it in order to heal it” (138). On, then, to the formula language for the clear and precise presentation of the pure and innocent truth.

IV. Leibniz on his own philosophy

In his “Preface to a Universal Characteristic (1678-79),” Leibniz asserts early on that “there is nothing that cannot be numbered” (5). There is room to doubt this apparently simple claim, particularly in the arena of feelings, representations, dreams, etc., but it seems widely, if not predominantly, accepted by many philosophers. The next sentence, however, goes in a more complex and extreme direction. “And so number is, as it were, metaphysical shape, and arithmetic is, in a certain sense, the Statics of the Universe, that by which the power of things are investigated” (5). This sentence deserves careful, extended attention.

As for the first part, if shape is the form or outline of a thing, and metaphysics is the study of things as they really are, then “metaphysical shape” might mean something like the true outline, or the true form. The claim that this true form is numeric would seem to suggest that quality is inessential, since qualities belong to a conceptual category distinct from numeration. It would also seem to suggest the possibility that even substance is only important as a numerable

entity. Thus, the other nine of Aristotle's *Categories*—"what," "where," "when," "in relation to what," "in what position," "holding what," "how acting" and "how being acted upon"—all fade away before their sibling, "how many." Truth becomes leaner, simpler, more efficient, and more ruthlessly and violently abstract.

As for the second part, if arithmetic is the discipline of counting, and statics is understood in opposition to dynamics, then the arithmetical "Statics of the Universe" would involve a taking of inventory, or census, of everything in the cosmos. This conception implies that the universe is, in some sense, fixed, stable and composed of permanent and discrete units that can be counted. In other words, the universe is like a giant puzzle, all put together, and just waiting for someone to trace all the lines that form the boundaries among the various puzzle pieces.

And the last phrase of the quote sheds further light on why, and in what way, number and countability are important here. There is power in numbers, and if one knows how many things there are in the cosmos, and how many members of each species of thing, then one knows roughly how powerful each species is, and what each is capable of doing. It was perhaps for this reason that, according to 1 Chronicles 27:23-24, King David took a census of the nation of Israel, and was then punished by God. This passage is often interpreted to mean that David was trusting in himself, and not God, and trying to estimate his capacity to wage war based on the size of his army. In a similar way, Leibniz, as lifelong peacemaker, might have been interested in the ability of any one part of the world to "wage war" on another part, particularly one European nation against another.

Reminiscent of another famous biblical story of human hubris and a corresponding divine punishment, Leibniz suggests two paragraphs later that through the "help" of a "Universal Characteristic" such as his own, "different nations can communicate their thoughts, and each, in

its own language, read what the other wrote” (6). I am referring of course to the Tower of Babel, a project of ambitious men to build a structure high enough to reach the dwelling place of the gods, in response to which God supposedly initiated the great diversity of human languages, in order to prevent the workers from communicating well enough to finish the tower. Leibniz, the son of a theologian, and a scholar of the medieval Christians, is thus in a sense trying to single-handedly reverse the Judeo-Christian God's judgment against human aspiration to the divine. Might one understand William Peace-God, then, as trying here to play god?

A little further down, Leibniz refers (in anticipation of Frege's way of carrying out a similar project) to the characteristic as “an alphabet of human thoughts,” and one through which “all things can be discovered and judged” (7). Leibniz specifically credits Aristotle, who “examined the inner depth of notions with great skill” as an inspiration in this project, but criticizes Descartes for not seeing its importance, as “a way of establishing a rational philosophy as clear and unshakable as arithmetic” (8). Surprisingly, Leibniz shifts abruptly in the last half of that sentence to the religious language of “sects,” and claims that “a sect using this sort of reasoning would immediately arise as soon as it exercised control over reason, as in geometry, and would not perish or weaken until the human race lost knowledge altogether through the invasion of some new barbarian horde” (8). It is unclear whether the sect or the reasoning is what would take “control” of reason here, but Leibniz's use of rhetoric of dominance and mastery, followed by that of strength and survival, seems telling. The same philosopher who spoke earlier in this essay of “the true Cabbala” is here linking his universal characteristic to (a) religious division, (b) warfare and perhaps even (c) ethnic-racial prejudice. I suggest the latter because “barbarian hordes” are typically imagined as consisting of ethnic or racial groups

different from one's own, such as Teutonic tribes in the eyes of ancient Romans or Native Americans in the eyes of United States settlers.

The next paragraph gets to the heart of what the characteristic is all about, as Leibniz writes of developing/assigning “characteristic numbers for all ideas” (8). In case this point has not been clear already, Leibniz's aim and goal with his universal characteristic is to establish a one-to-one correspondence between numerals and concepts. So, for example, “142” might be the number for “acid reflux.” And “3” might be the number for “awake.” Leibniz optimistically estimates that, for “a few chosen persons,” the creation of this characteristic would only take “five years; in two years they could set forth those doctrines most often used in daily life, that is, morals and metaphysics in an unshakable calculus” (8). Note here the second appearance of the vivid adjective “unshakable.” What kind of shaking is Leibniz so concerned about? What happens when the shakable thing shakes? What happens if shaking were never to occur again?

One hint as to what Leibniz has in mind can be found in the same place in this text wherein the reader also finds the other moment in which logic and racism intersect most vividly in his life and work. In a phrase that could almost be a verbatim quotation from Bishop Avila's answer to Queen Isabella, Leibniz asserts that “nothing is more effective for the propagation of the faith than this invention, except for miracles and the holiness of an Apostolic man or the victories of a great monarch” (9). When one encounters the (almost inevitably darker-skinned indigenous) people, there is no better way—aside from outright warfare a la Sepúlveda—to “whiten” them (to use contemporary academic parlance) than to use the universal characteristic. If, as Avila asserted, “language is the perfect instrument of empire,” then the perfect language of the universal characteristic would be an even more perfect instrument thereof. Leibniz elaborates in the next sentence as follows:

For wherever missionaries can once introduce this language, the true religion, the religion entirely in agreement with reason will be established and in the future apostasy will be feared no more than we fear that people will condemn arithmetic or geometry, once they have learned it (9).

Just as there is a “true logic” for Leibniz, so there is one “true religion” that corresponds to it, and what is more, the latter can be promulgated and sustained by the former. Logic, expressed in the universal characteristic, is the ultimate weapon in the war for souls. It is the one way to destroy the enemy's ability to fight back, to disagree and challenge the orthodoxy. Las Casas could not have resisted Sepúlveda at all, and thus had a significant impact on future European-Native American relations, had Sepúlveda possessed the power of Leibniz's invention. As matters were, Las Casas was able to draw on rhetoric, eloquence, and the force of his character and decades of direct experience and service to the Native Americans. For just this kind of reason, Leibniz ultimately goes beyond even the creator of the Spanish grammar, insisting that “we must go beyond words” (9). But going beyond words, as Leibniz the alleged peacemaker was unlikely to have forgotten, almost always means to resort to force.

Perhaps Stewart is, in the end, wrong about Leibniz, and saw a peacemaker instead of a kind of tyrant. That Leibniz craved political power is clear to Stewart, as he expresses in both amusing and disturbing anecdotes. An example of the former, amusing, kind is that Leibniz, at one, seemingly arbitrary point late in life “began to sign his letters with a small and illegible squiggle between his first and last names—a squiggle that grew in confidence until it unmistakably represented a *v*, as in Gottfried Wilhelm *von* Leibniz” (258). In other words, Leibniz tried to gradually, deceptively “make himself” into a nobleman. “Eventually,” however, “the squiggled ennoblement vanished from his letters as mysteriously as it had arisen” (258).

An example of the latter, more disturbing, kind is found in a letter to Foucher (1675), and it relates to Descartes' famous evil demon—the being he speculated may be ruling the world in place of God and deceiving us into thinking that our sensations correspond accurately to a world around us. “I do not see,” Leibniz writes, “that his power would be imperfect on that account” (4). Leibniz, in all likelihood an unbeliever himself, apparently saw no harm into deceiving entire civilizations into a belief in the Christian God as a means to an end—the end of a world in peace with Leibniz in power.

In case the description of Leibniz as a tyrant still sounds extreme to the reader, it might be helpful to look briefly at the “Samples of the Numerical Characteristic (1679).” There one can see how Leibniz thought the final product would work, “without any mental effort or danger of error,” for a world with, by implication, no more risk or mindfulness—and thus a world that seems conceptually akin to dystopias such as those of *Brave New World* and *1984* (10).

V. Questions of race in Leibniz's logic

These writings, according to the translators, “represent only one of a number of different formalisms Leibniz explored before eventually setting the problems aside” (10). True to the basis of logic, the writings begin by asserting the necessity of distinguishing between “form and subject matter” (10). His first example involves triangles, and thus mathematics. The second moves to science, but suggests his interest in alchemy, with a syllogism involving minerals, metals and gold. As he moves from syllogisms to the characteristic proper, he alerts the reader that his concern for the present will be with “fictitious numbers, which, for the time being, can be used in place of the true characteristic numbers” (11). This means both that this logical, or pseudo-logical, enterprise is self-consciously shot through with the imaginary, and also that

Leibniz thinks there is one true arrangement of the characteristic, as opposed to there being a variety of arbitrary possibilities which could work equally well due to their formal properties.

Leibniz's first example of propositions to be translated into their characteristic numbers explicitly involves religion, in the role of that which facilitates ethical well-being. It is the following: “a pious person is happy” (11). He then introduces “wicked” as an antonym for the pious, in the proposition “a wicked person is not happy” (11). Then the rhetoric shifts, abruptly to contemporary ears, from religion to economics, with “some wicked person is wealthy” (11). Having previously stressed the ineliminability of the subject and predicate, Leibniz goes on to assert that “In every proposition, the predicate is said to be in the subject, that is, the notion of the predicate is contained in the notion of the subject” (11). Plugging this insight back into Leibniz's above two examples, this would mean (a) that happiness is completely contained in, subjugated by, or within the realm of piety, and thus of religious rectitude and orthodoxy; and (b) material prosperity and success is within the province and dominion of at least some people who lack piety, such as perhaps the non-Christian American Indians believed in Leibniz's day to possess vast amounts of gold. As I have observed in Hanke, Sepúlveda argued that the Native Americans' wickedness meant that they could be lawfully conquered in order to be converted to Christianity, and in the process their unworthily-held riches could be justifiably confiscated. On this note, I wish to suggest, especially in light of the aforementioned details from Leibniz's life and thought, that there might be a significant connotation here, in the concept of “containment,” of political assimilation and tyrannical control. In the OED alone, the second of two variations on the definition of the word “containment” is overtly political, referring to “The action or policy of 'containing' a hostile nation, etc.” Put differently, the subject is the conqueror of the predicate, and the predicate is the serf of the subject-lord.

The next important point in the text concerns what Leibniz terms “composite notions,” which he understands to be “composed of other notions, sometimes positive, and sometimes negative” (12). These can, accordingly, be expressed “by means of two characteristic numbers, one with the sign '+' or 'plus,' the other with the sign '-' or 'minus'” (12). His first example of this notation—which is the basic format that every other notation takes in this version of the characteristic—is as follows:

“A prime number is a number that is indivisible.”

+22 -17

With this basis, the characteristic number for every “notion” can be derived “by multiplying all of the characteristic numbers of those positive (negative) notions from with the positive (negative) notion of that term is composed” (12). Again, it is easier to illustrate this than to explain it.

Thus, suppose: animal rational

+13 -5 +8 -7

Then for this term: man

The characteristic number is: +(13 x 8) - (5 x 7)

that is: +104 - 35

The most important part of this process is to make sure that the positive and negative characteristic numbers for any complex notion “do not have a common divisor,” which would imply that one aspect was present both positively (on the + side) and negatively (on the – side), and in this system, two numbers that have the same magnitude but opposite +/- values represent contradictory propositions (12-13). This, in turn, is fundamentally important to Leibniz because he maintains that “every *false* proposition that can be known through reason alone, that is, every

one that involves falsity in its terms, is such that its subject and predicate contain incompatible notions” (13, emphasis original). The point of all this notation then, is that the trained reader could simply look for a common denominator between the subject and predicate terms of any proposition for which those terms' characteristic number is known; if any exists, the proposition must be false, because contradictory.

Leibniz's first example of such a contradictory proposition, the falsity of which is apparent at the level of its characteristic numbers, returns to the well of religious morality, and is that “A pious person is wretched” (13). It seems probable, given the similarity of these terms to the previous ones, that “wretched” is intended here as an antonym to “happy.” The meaning seems clear. Orthodox Christians can never truly be unhappy as long as they are fully pious. Leibniz's next concrete example is also the final quote that I will analyze from the “Sample of a Numerical Characteristic.” After reminding the reader “that the notion of the predicate is always in the subject,” Leibniz offers the example of “Every wise person is pious” (13). Thus, every truly wise philosopher, and thus every true philosopher—presumably intended to include Leibniz himself—is also an orthodox (since pious) Christian. Others, such as Spinoza, Averroes, and some versions of Aristotle, though they might appear wise, are not so after all, because they are lacking for Leibniz in the religion of Christianity.

Since these two texts, which introduce and attempt the Universal Characteristic, abound in language related to God, I will conclude this essay by taking a brief look at Leibniz's treatment of this subject elsewhere in his writings. First, in his first philosophical publication (“Meditations on Knowledge, Truth, and Ideas”), Leibniz claims that “nothing is truer than that we have an idea of God and that a most perfect being is possible, indeed necessary” (26). Second, in “On Contingency (1686?)” Leibniz describes this God as one “who alone traverses

the infinite series in one stroke of mind,” and concludes that “we must concede that God always acts wisely” (29). And, third, according to letters from Leibniz to Arnauld, part of this wisdom evidently dictated that “the souls of brutes would have all been created from the beginning of the world,” whereas “the rational soul is created only at the time of the formation of its body” (79).

The word for brute in French is a perfect cognate of the English, and like the English refers to rudeness, barbarity and animality, and can even function as a synonym for beasts. The barbarian's soul, then, is part of the mere furniture of the world, like the rational soul's body, “or the *cadaver*,” which, according to Leibniz (in the same letter), “can be called a substance only in an improper sense, just as in the case of a machine or a pile of stones” (78). Irrational humans, or brutes, which would probably include the American Indians and black Africans, thus fair no better with Leibniz than non-human animals in Descartes, mere machines with no stake in immortality.

As a complement to this conception of the darkness of the dark peoples, Leibniz elsewhere asserts (in a letter to Queen Sophie Charlotte of Prussia) that “the force of the conclusions of reasoning” is “found in this I [sic] and in the understanding,” and is “part of what is called the natural light” (189, emphasis original). Leibniz goes on to explain to her majesty that “It is also by this *natural light*,” again in emphatic script, “that the *axioms* of mathematics are recognized” (189). Several paragraphs later he repeats to the queen, again with syntactic emphasis, that “there is *an inborn light within us*,” and that this is, to return to the brutes, “an advantage we have over the beasts” (191). Thus knowledge and rationality are again linked to light, which is possessed naturally and inherently, and which God denies to the “brutes”—potentially inclusive, as I noted above, of darker-skinned humans as well.

VI. Conclusion: questions of race in Western formal logic in general

Through the analyses in this essay, I wish to suggest that it is meaningful and helpful to think of Leibniz's primary achievement in the history of formal logic—the attempt at a universal characteristic—in the context of the most politically profound use for which he recommended it—the conversion to Christianity of dark-skinned non-Europeans—and the specific example of such conversion for which he personally advocated—the Egypt Plan. Leibniz describes himself as having pursued mathematical logic in order to get to God, he markets his numerical characteristic as capable of facilitating that end, and he tries to persuade the most powerful person in Europe, Louis XIV, to conquer Africa in part to Christianize the people there. But despite all this, there is considerable evidence both that Leibniz did not himself believe in God or consider himself a Christian in the ordinary sense, and also that he was singularly, even obsessively, concerned with world peace, even at the cost of global deception and the rule of a church whose rituals he neglected. What could have motivated this logician, who was a student of Aristotle and the medievals, and likely a non-Christian, to try to facilitate a conquest of the world in Christ's name?

Perhaps it was nothing other than the racism sometimes attributed to Aristotle, but under the new guise of anti-heathenism. No longer, in Leibniz, does this racism declare itself explicitly in opposition to people with darker skin. Instead, this opposition is masked by the new explicit opposition to non-Christians. But the particular non-Christians who are opposed do in fact happen to be members of large civilizations, culturally heterogeneous to Europe, whose skin is significantly darker than that of the average European. Is this merely a coincidence? It is widely accepted that skin color is often an important index to various racial differences, both real and imagined, so might it not be the case that this darker skin, as one marker (among many) of racial

difference, might symbolize a meaningful connection between racism and Leibniz and his formal logic?

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