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## **The Problem of *Indio* Inferiority in Science: Rizal's Two Views**

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RAMON GUILLERMO

# The Problem of *Indio* Inferiority in Science Rizal's Two Views

This article discusses chapter 13, "The Physics Class," of José Rizal's *El filibusterismo* and the problems posed there regarding racist notions of the incapacity (*poco capacidad*) of *indios* to imbibe scientific thought and reasoning. It is argued that Rizal attempted to dispel such conceptions by focusing his satirical polemic on the faulty system of education imposed by the Spanish friars on Filipinos. However, it seems that toward the end of his life Rizal eventually conceded that there was something to the idea of the "limited intelligence" of the indio.

**KEYWORDS: INTELLIGENCE · RACE · MISTRANSLATION · HISTORY OF SCIENCE · SPENCER**

There is an ironic commentary at the beginning of chapter 13 entitled “The Physics Class” of José Rizal’s *El filibusterismo* (*Fili*) explaining why, despite the intimidating presence of a “magnificent” and “mysterious” physics cabinet full of enigmatic scientific apparatuses at the Colegio de Santo Tomás, the school had not produced a single *indio*, or native colonial subject, who could measure up to the great scientists of Europe (Rizal 1891, 92). Various European scientists were mentioned in the chapter such as the Frenchmen Antoine Lavoisier (1743–1794), Joseph Louis Gay-Lussac (1778–1850), the Italian Angelo Secchi (1818–1878), the Englishman John Tyndall (1820–1893), the German Jöns Jacob Berzelius (1779–1858), and the Swiss Robert Bunsen (1811–1899). (Father Millon, the professor of physics in the chapter, considered these scientists as being among the “conceited materialists.”<sup>1</sup>) The unnamed narrator of the *Fili* then speculates on the backwardness of indios in the scientific field compared to Europeans. He considers that it might be due either to the “indolence” (*indolencia*), the “low capacity of the indios” (*poco capacidad del indio*), or other “ethnological” and “suprasensible” reasons (*otra causa cualquiera etnológica ó suprasensible*) rooted in the Malayo-Filipino race (*raza malayo-filipina*). Interestingly, this is the only chapter where this phrase occurs in the whole of the *Noli me tángere* and the *Fili*.

The chapter on “The Physics Class” was apparently intended to debunk, in a comic fashion, the various reasons cited by the narrator regarding the lack of progress in the sciences among the indios. The problem of “indolencia” is later dealt with in detail by Rizal in his major essay on “La Indolencia de los Filipinos” published in *La Solidaridad* in 1890. Leaving aside the speculations on “ethnological” and “suprasensible” reasons for indio mediocrity (which probably assigned to the indios a “gift” in spirituality and holistic thought as opposed to the materialism and analytical thinking of the West and other such nonsense), Rizal apparently devotes the whole chapter to refuting the notion that the Malayo-Filipino might be of “little capacity” (*poco capacidad*). The chapter on “The Physics Class” is a trenchant critique of the colonial and “monastic” education in the Philippines as much as it is a virtuoso performance of humorous erudition. This short study aims to bring out the fundamental ideational contradiction in this chapter in order to lay out more clearly Rizal’s refutation of the notion of the “poco capacidad” of the indio and the role of monastic education in the “darkening” of indio intelligence. It then moves on to another passage from Rizal’s pen which returns to the

problem of “poco capacidad del indio” in the form of “limited intelligence” (*limitada inteligencia*) in races. The discussion aims to raise what may perhaps be unsettling questions regarding the development of Rizal’s thoughts on the problem of races and intelligence.

### The Darkening of the *Indio* Mind

The narrator differentiates between “physics” and “philosophy” early on in the chapter. According to the published version of the *Fili*, “The physical sciences are eminently practical, of pure observation and deduction. [Father Millon’s] forte was in philosophy, purely speculative, of abstraction and induction” (Las ciencias físicas sean eminentemente prácticas, de pura observacion y deducccion. Su fuerte estaba en las filosóficas, puramente especulativas, de abstraccion é induccion) (ibid., 92). One can definitely concur with the notion that the discipline of “physics” is indeed based upon “pure observation” and is eminently practical (even though the narrator mentions that the scientific equipment of the school is only there for display and kept locked in the “marvellous” cabinet). In contrast to “physics,” “philosophy” may indeed be viewed as “purely speculative” and founded on “abstraction.” However, it seems that Rizal had it the other way around, when he associated “physics” with “deduction” and “philosophy” with the “inductive” method. This is indeed a complicated matter, but it is difficult to assume that Francis Bacon’s revolutionary notion of the scientific method as “inductive” as opposed to the “deductivism” of Scholastic (or Aristotelian) natural philosophy was not known to Rizal (Vickers 1992). Did Rizal therefore make a mistake here? If one consults the handwritten manuscript of the *Fili*, it can be noticed that it is somewhat different from the published version. According to the draft, “The physical sciences are eminently practical, of pure observation and induction” (Las ciencias físicas sean eminentemente prácticas, de pura observacion y induccion) (Rizal 1957, n.p.). This is indeed correct, but it also continues as follows, “His forte was in the philosophical, purely speculative, of abstraction and induction” (Su fuerte estaba en las filosóficas, puramente especulativas, de abstraccion é induccion) (fig. 1). This is clearly an error in the handwritten draft since the whole point of the passage was to establish a diametrical, and perhaps polemical, opposition between philosophy and the natural sciences. It therefore does not make any sense that he would characterize both as being “inductive.” It was probably in the correction of the proofs that another error crept in which made the outcome even more confusing.

Y <sup>de</sup> ~~la~~ <sup>se somía con omalicia</sup> ~~verdad que se somía con omalicia~~ <sup>ante ciertas teorías</sup> físicas y tenía por visionario cuando no por loco al jesuita Secchi imputándole el trazar triangulaciones sobre la horta, como efecto de sus ~~mauvas~~ <sup>mauvas</sup> astronómicas, por cuya causa decía él le prohibiré decir más; ~~esta~~ <sup>esta</sup> ~~del~~ <sup>del</sup> también <sup>de</sup> muchos notaron en él cierta inquietud contra la ciencia que explicaba, ~~pero~~ <sup>talos lunares</sup> ~~son~~ <sup>son</sup> ~~pequeñas~~ <sup>pequeñas</sup>, preocupaciones de escuela y religión y se explican fácilmente no solo porque las ciencias físicas sean eminentemente prácticas, de pura observación e **inducción** mientras su fuente estaba en las filosofías puramente especulativas, de abstracción e **inducción**, sino también porque a fuer de buen dominico, amante de las glorias de su orden, no podía sentir cariño por una ciencia.

Fig. 1. Science and philosophy as both "inductive" in Rizal's manuscript of *El filibusterismo*

Some reference materials that were said to have been used as textbooks in the physics class were also mentioned in the chapter. Father Millon was reputed to have been well acquainted with the *Physics* of Aristotle and Father Amat's book on the subject<sup>2</sup> and, once in a while, he also glances at the one by Ganot (Rizal 1891, 91). The latter, Adolphe Ganot (1804–1887), was the author of some very popular and well-illustrated physics textbooks in Europe during the second half of the nineteenth century, one of which was the *Traité Élémentaire de Physique* (Ganot 1866, first printed in 1852). This work was widely translated into Spanish, English, German, Russian, and other languages and around 204,000 copies were printed in the French language alone (Khantine-Langlois [2006?]). The narrator also says that Father Millon carefully read "El Ramos," which undoubtedly refers to the *Elementos de Física y Química* by Miguel Ramos (perhaps first published in 1839) (fig. 2). In fact, Rizal directly quotes from the section of Ramos's textbook on the subject of the "mirror" (*espejo*) (table 1). This is the exact definition that the startled student called by Father Millon automatically blurts out like a "phonograph" (*fonógrafo*) driven by a "machine running on steam" (*máquina de vapor*). (Rizal here cleverly yokes together two modern inventions into a mythical machine to describe how learning science was a matter of rote memorization without understanding.) Ramos's definition of a



Fig. 2. Title pages of physics textbooks by Miguel Ramos (left) and Adolphe Ganot (right)

“mirror” is noticeably different from that of Ganot (table 2). The latter more logically classified mirrors according to their shapes, which were either flat or curved. Ramos, on the one hand, after defining a “mirror” as consisting of all “polished surfaces” (*superficie pulimentada*), categorizes these according to the “substance” (*sustancia*) which makes up their “surface” (*superficie*) as being, namely, made of metal or glass. Perceiving the inherent weakness of such a definition, Father Millon attacked it sophisticatedly with gusto by marshalling several examples that demonstrate its contradictory and incomplete nature. His first example: What if the “surface” of a piece of “kamagong” wood (*Diospyrus philippinensis*) were polished—could this then be called a “kamagong mirror” (Rizal 1891, 93)? The student being drilled was stumped by this question because, even though such a definition makes the existence of such a wooden mirror plausible, it is nevertheless not among the types of mirrors stated in the book (and therefore “could not exist”). If it is admitted that there are indeed such things as “kamagong mirrors,” can any other object be designated as being a mirror by virtue of its polished surface alone? Father Millon, going on to his next absurd example, asserts that if it is true that having a “polished surface” is the defining trait of a mirror, then it follows that what is “behind” such a “polished” surface is unimportant. What then if the mercury were scratched from behind a glass mirror and a *bibingka* (a type of flat rice cake)

**Table 1. The definition of “mirror” from Miguel Ramos and in Rizal’s *Fili***

<i>Elementos de física y química</i> (MIGUEL RAMOS)	<i>El filibusterismo</i> (JOSÉ RIZAL)
Se da el nombre de espejo á toda <b>superficie</b> pulimentada, destinada á producir por la reflexion de la luz las imágenes de los objetos situados delante de dicha <b>superficie</b> . Por las <b>sustancias</b> que forman estas <b>superficies</b> se dividen en espejos metálicos y espejos de cristal.	Se da el nombre de espejo á toda <b>superficie</b> pulimentada, destinada á producir por la reflexion de la luz las imágenes de los objetos situados delante de dicha <b>superficie</b> por las <b>sustancias</b> que forman estas <b>superficies</b> se dividen en espejos metálicos y espejos de cristal . . .
Los primeros son formados por el laton ó por una aleacion de diferentes metales, y los segundos son formados por una lamina de cristal, cuyas dos <b>superficies</b> están muy pulimentadas, y una de ellas tiene adherida una amalgama de estaño.	Los primeros son formados por el laton ó por una aleacion de diferentes metales y los segundos son formados por una lámina de cristal cuyas dos <b>superficies</b> estan muy bien pulimentadas y una de ellas tiene adherida una amalgama de estaño.

**Table 2. Comparative definitions of mirror, Ganot and Ramos**

ADOLPHE GANOT (FRENCH ORIGINAL)	MIGUEL RAMOS
<b>On nomme miroir tout corps dont la surface parfaitement polie réfléchit régulièrement la lumière</b> en reproduisant l’image des objets qu’on lui présent. <b>On en distingue de deux sorts: les miroirs plans et les miroirs courbes.</b>	<b>Se da el nombre de espejo á toda superficie pulimentada,</b> destinada á producir por la reflexion de la luz las imágenes de los objetos situados delante de dicha superficie por las sustancias que forman estas superficies se dividen en <b>espejos metálicos y espejos de cristal . . .</b>

were instead placed behind it? Would this result in a “bibingka mirror” (ibid., 94)? Through a clever sleight of hand, Millon transposes the terms “polished surface” and “substance” into “what is in front” and “what is behind,” respectively. By means of juxtaposition and apposition (e.g., “*accidente superficie*,” “*superficie accidente*”), Father Millon transforms the purely physical notion of “surface” into the notion of “accidental surface trait,” which originates from the Aristotelian distinction between the “accidental” and “essential” traits of beings (Novak 1956; Copi 1954). Millon likewise succeeds in shifting the initially purely spatial distinction between the “front” and “back” toward the philosophical distinction between “external appearance” (Schein), which is deemed “illusory” and the genuine “essence” or “being” (*Sein*) of things.<sup>3</sup> In all of these distinctions, the “essential” is privileged over the “accidental” in defining beings. Likewise, what is valued is not the “external appearance” but the “hidden” or supposedly not directly perceptible essence of things (table 3).

Through these surreptitious maneuvers that transpose the meaning of “surface” from a purely physical context toward a philosophical, scholastic meaning, Father Millon transforms Ramos’s stated definition of “mirror” as being equivalent to the “surface” itself (*el espejo es la superficie*) into a philosophically absurd statement. For how can the essence of the mirror in actuality be its “surface” if the latter can only be considered “superficial” and “accidental” aspects of its being? The poor students, who were perhaps much better trained in the niceties of scholastic philosophy than in empirical science, truly could not conceive, within the space of these received categories, that the essence of anything could reside in its superficial, accidental, and external traits. Indeed, how could such an idea even be uttered within the constraints of this discursive field? So the punchline of Millon’s rather

**Table 3. The mixing of physical and philosophical terms in chapter 13 of *El filibusterismo***

Se da el nombre de <b>espejo</b> á toda <b>superficie</b> pulimentada . . .	The name mirror is applied to all polished surfaces . . .
al cuerpo que forma esta <b>superficie</b> ó sea la <b>materia</b> sobre que descansa esta <b>superficie</b> , la <b>materia prima</b> , modificada por el <b>accidente superficie</b> , porque, claro está, siendo la <b>superficie accidente</b> á los cuerpos no puede existir sin <b>substancia</b> . . .	the body which forms this surface or the matter on which rests this surface, the prime matter, modified by the accidental surface, because, it is clear, being the accidental surface of bodies, it cannot exist without substance . . .
Ergo, <i>per te</i> , el espejo es la <b>superficie</b> . . .	Therefore, <i>per te</i> , the mirror is the surface . . .

complicated “joke,” the sentence, “For you [therefore], the polished surface constitutes the essence of the mirror . . .” (*Per te*, la superficie pulimentada constituye la esencia del espejo . . .) (Rizal 1891, 95), baffled them no end. Father Millon, while teaching a science founded on “pure observation,” brings everything back to his forte “*especulación*.” It therefore seems no accident that Rizal used the mirror as an example, since “*especulación*” is after all related to the Latin *speculum* (mirror).

A note might be made here regarding some observed problems in the translation of this rather complicated chapter into Filipino/Tagalog. Four important translations of *Fili* into Filipino/Tagalog will be sufficient to give an idea of the difficulties involved in translating into Filipino/Tagalog the Aristotelian categories necessary to comprehend Father Millon’s prank. The first is by Patricio Mariano (1877–1935), which was first published in 1911. The second is the one by Pedro Gatmaitan (1889–1964) published in 1928. The third is by Servando de los Angeles (1886–1972) printed in 1956. And finally, the newest translation is by Virgilio Almario (1944–), which was first published in 1998. The word *ciencia* (science) was translated by Mariano, Gatmaitan, and De los Angeles, as *karunungan* (knowledge), while Almario uses the more recent *agham* (science). In a dictionary that Eusebio Daluz published in 1915, he defined “*agham*” as “*theoria/theory*.” It is therefore possible that its first definition as “*science*” in a dictionary was already rather late in the *National Language–English Vocabulary* (1950) (Guillermo 2009, 268–69). The word *esencia* (essence) was translated in different ways by the four translators (table 4). Gatmaitan translated it as

*sangkap* (ingredient) and *diwa* (spirit). De los Angeles directly borrows it as *esensiya* and in one instance also translates it as *kalikasan* (nature). On the other hand, “*esencia*” was elided in Mariano and Almario by means of just directly referring to the mirror itself rather than to its “*essence*,” although Mariano did employ *kabagayan* (thing-ness) in one instance as an equivalent. The words “*superficie*” and “*accidente*” were neutralized or reduced to a single equivalent by means of translating it as *pangmukha* (external appearance) in Mariano. Gatmaitan, on the other hand, translates “*superficie*” as *ibabaw* (surface) and *pangibabaw* (covering) and “*accidente*” as “*pangmukha*” (external appearance). Almario’s translation is unique in its conscious borrowings from other Philippine languages as part of his program of developing Filipino as a national language. Although the use of *rabaw* from Ilocano to mean “*external appearance or part of an object*” (*panlabas na mukha o bahagi ng isang bagay*) may be an acceptable and practical solution in translating “*superficie*,” the use of *lawas* from Bicol and Hiligaynon to mean “*body*” may not necessarily be self-explanatory for casual Filipino readers (Almario 2001). The word *bagay* (thing) is used in all of the translations to translate *materia* (matter), *materia prima* (first matter), *sustancia/substancia* (substance), and *esencia* (essence). This is most striking in Mariano’s translation. On the other hand, Gatmaitan’s use of such words of obscure origin as *sadhana* for “*material*” does not help the ordinary reader. It could be proposed that the main weakness of all the Filipino/Tagalog translations is the unresolved problem of translating “*accidente*,” which is important in the transition to the notion of “*superficie accidente*” (accidental

**Table 4. Translations of philosophical terms into Filipino/Tagalog**

	ESENCIA	SUSTANCIA/ SUBSTANCIA	ACCIDENTE	SUPERFICIE
Mariano, 1911	kabagayan/ tunay na salamín	mga bagay/ kabagayan	pangmukha/ kabaguhan	pangmukha
Gatmaitan, 1928	sangkap/ diwa	sustansia/ makakapitan	pangmukha	ibabaw/ pangibabaw
De los Angeles, 1956	esensiya/ kalikasan	mga bagay/ bagay	kaugnayang (ibabaw)	ibabaw
Almario, 1998	ang siyang salamín	sangkap/ kalamnan	di-sinasadya	rabaw

surface trait). It is clear that “accidental” here does not mean *di-sinasadya* (unintentional), as Almarino translated it most recently. The “accidental” here is the opposite of the “essential” within philosophical discourse. The translations are therefore unable to convey the absurd *contradictio in adjecto* in Father Millon’s dilemma (table 5). The translators were seemingly unable to perceive the systematic interrelationships of the Aristotelian categories deployed by Rizal and therefore failed to translate these in an intelligible way. One possible solution is just to borrow the Aristotelian lexicon so that “esencia”=“esensya,” “substancia”=“substansya,” “materia”=“materya,” and “accidente”=“aksidente,” accompanied by explanatory material if necessary. By simply borrowing these words, the possibility of erasing the original conceptual interrelationships can be avoided. Because of problems of translation, the gist of Rizal’s educational critique and his portrayal of the conflict between the Baconian scientific revolution and the purported dominance in Spanish-run universities of an antiquated scholastic philosophy is only very partially understood, if at all, among readers of the Filipino/Tagalog translations.

Rizal’s critique unfolds in a fabulously comic manner by showing the confusion of categories that occurs when the conceptual matrix of scholastic philosophy is imposed on the problems of empirical natural

science (fig. 3). The relevant issue, as it is perceived here, and independent of any reference to racial or biological explanation, was that the cabinet of practical, observational, and inductive science was closed to the students by the dominant scholastic mode of thinking. The narrator recounts that the walls of the classroom were empty, there was not a single diagram of whatever scientific instrument. Above the teacher’s podium there was only an engraving of St. Thomas Aquinas (Rizal 1891, 89). The “darkening of the mind” of the indio is therefore the result of this type of education where “the students leave the classroom “as ignorant as when they had entered.” This is a “brutalizing” education in which “millions of intelligences” (*millones de inteligencias*) having “no idea of how to guard the light of their own intelligence” (*la luz de su inteligencia*) have had their lives “darkened and blinded” (ibid., 99).

With this critique, Rizal seems to have squarely laid the blame on faulty education as the cause of scientific backwardness rather than on any innate incapacity or lack of intelligence of the indio. However, the question does not end there. In a letter to Blumentritt written eighteen months before his execution, the picture becomes somewhat more complicated.

### On the Limited Intelligence in Races

Coming back to the question of why, despite the presence of a “magnificent” and “mysterious” physics cabinet, no “indio” had yet been produced who could measure up to the great scientists of Europe, Rizal took up the problem of the alleged “poco capacidad” of the indio once again. One of Rizal’s final reflections on this issue seems to have not been given the attention it deserves (except for a cursory mention by the biologist Perry Ong [2011]).<sup>4</sup> In a letter written to Blumentritt from his exile in Dapitan and dated 4 July 1895, Rizal undertook to explain the so-called “limited intelligence in races” (*las inteligencias limitadas en las razas*):

*Acerca de las inteligencias limitadas en las razas, después de estudiar detalladamente el asunto, creo como tú, que no las hay y las hay. Respecto á inteligencia, sucede lo que á la riqueza: hay naciones ricas y hay naciones pobres; hay individuos ricos y hay individuos pobres. El rico que pretenda haber nacido rico se equivoca: ha nacido tan pobre y tan desnudo como el hijo de un esclavo. Lo que hay es, que ha heredado los bienes acumulados por sus padres. Yo creo, pues, que la*

**Table 5. Translating the paradox of the mirror into Filipino/Tagalog**

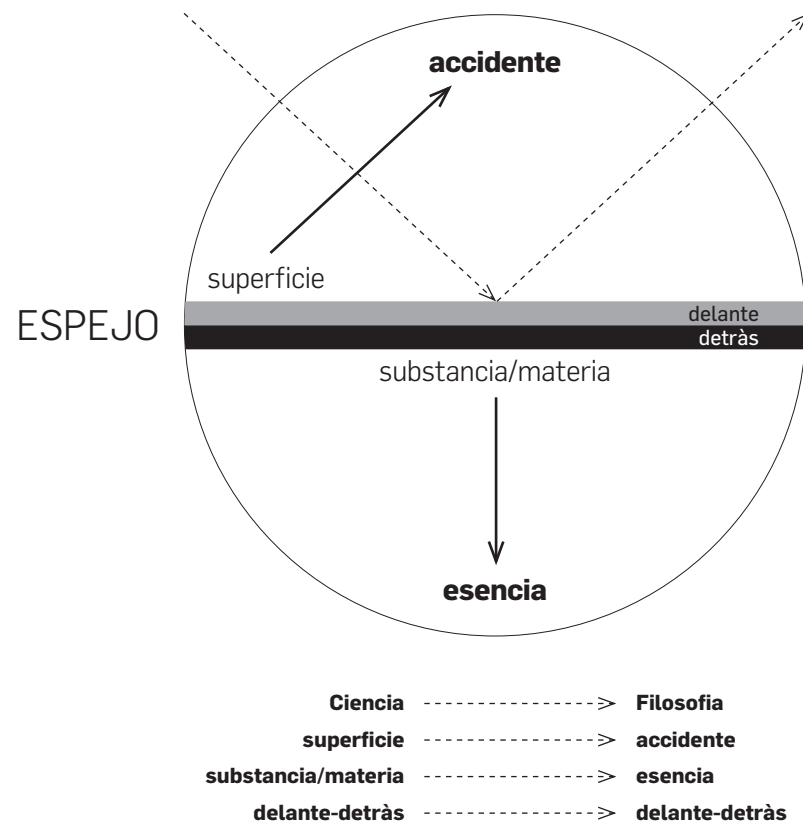
RIZAL, 1891	MARIANO, 1911	GATMAITAN, 1928	DE LOS ANGELES, 1956	ALMARIO, 1998
<i>Per te</i> , la <b>superficie</b> pulimentada constituye la <b>esencia</b> del espejo...	<i>Per te</i> , ang makintab na <b>ibabaw</b> ay siyang <b>tunay</b> na salamin.	Para sa iyo ay ang <b>ibabaw na bagay</b> na kininis ay siyang <b>diwa</b> ng salaminan . . .	<i>Per te</i> (Sa ganang iyo), ang <b>ibabaw</b> na binuli ay siyang <b>kalikasan</b> ng salamin . . .	Para sa iyo, ang makinis na <b>rabaw</b> ang <b>siyang salamin?</b>
(For you, the polished surface constitutes the essence of the mirror . . .)				
superficie ≠ esencia	ibabaw ≠ tunay na salamin	ibabaw na bagay ≠ diwa	ibabaw ≠ kalikasan	rabaw ≠ salamin



inteligencia se hereda: razas que por ciertas condiciones especiales se han visto obligadas á trabajar con el cerebro, lo han desarrollado más, luego lo han transmitido á sus descendientes, quienes después han continuado etc. etc. Las naciones europeas son ricas, pero las naciones actuales no pueden decir sin temeridad que han nacido ricas: han necesitado siglos de lucha, sabías combinaciones, libertad, leyes, pensadores etc. que les legaron estas riquezas. Las razas ahora inteligentes, lo son después de un largo proceso de herencia. (Rizal 1961, 877)

Concerning the *limited intelligence in races*, after a detailed study of the subject, I believe like you do, that there is and there is none. With regard to intelligence, it is like riches. There are rich nations and poor

nations; there are rich individuals and poor individuals. The rich who pretends to have been born rich is mistaken—he was born as poor and as naked as the child of a slave. What he has that he has inherited is the *accumulated wealth of his ancestors*. I believe then that intelligence is inherited. Races which have been obliged to work with their brains on account of certain special conditions, have developed them more, then have transmitted them to their descendants who later have continued on, etc., etc. European nations are rich, but the present nations cannot say with temerity that they have been born rich. They needed centuries of struggle, wise combinations, liberty, laws, thinkers, etc. who bequeathed to them these riches. The intelligent races today are so after a long period of heredity. (Rizal 1992, 511–12)



It seems after all that Rizal, “after a detailed study,” did eventually conclude that racial factors did have something to do with intelligence, even if only in a relative and impermanent sense. There was indeed something lacking in the indio’s brain, which prevented her or him (even if only temporarily) from attaining or surpassing the greatness of European science. In this passage, Rizal takes recourse to biological explanations based on race and heredity (herencia) and plainly admits that there are indeed races with “more developed” brains than others (Lopez-Beltran 2004). The reference to races that have been “obliged to work with their brains (*cerebro*)” and have therefore “developed these more” leaves no room for doubt about this issue. From this point of view, the implication is that the “raza malayo-philipina” in general, and other “non-white” races, *at the present stage of their biological development* indeed probably have less developed “brains” than Europeans.

It should be emphasized that the belief in the collective inheritance of so-called acquired characteristics through the use (or disuse) of particular human faculties in the above passage obviously derives from Jean-Baptiste Lamarck (1744–1829) and the tradition of thinking more directly associated with him rather than with Charles Darwin (1809–1882) (Gissis 2005). The latter’s theory of “natural selection,” based as it is on random variations, does not require any notion of “adaptation” to explain the evolutionary process. In contrast, Lamarck’s view is that organisms respond to their environment by “adaptive modifications,” which they subsequently pass on to their offspring. It may be that this Lamarckian tendency reflects Rizal’s acquaintance with

Fig. 3. The transformation of physical into philosophical terms

the English philosopher Herbert Spencer's (1820–1903) writings on the subject, rather than any direct exposure to Lamarckianism itself. In fact, Spencer himself is credited by some writers for having brought the problem of “intelligence” (a “word” which Rizal crucially employs in the quote above) into psychology. Spencer blurred the distinction between biological heredity and cultural inheritance and therefore veered in some instances toward a kind of racist biological determinism (Lefèvre 2005).

However, Rizal makes explicit the “progressivist” possibility, while remaining within a Spencerian framework, of races being able to develop their mental abilities through a cycle of “use–repetition–habituation.” Given the proper conditions that he enumerates, unevennesses in the “mental development” among races may perhaps be evened out eventually. The “poco capacidad” (low capacity) or “inteligencia limitada” (limited intelligence) of the indio is not an unsurpassable limit. While maintaining a particular notion of “equality” based on “potential” development of the Malay race, Rizal nevertheless believed in some form of “limited intelligence,” and therefore of some kind of racial intellectual superiority (in a limited sense) as well. If he asserts the existence of “the intelligent races of today,” it is but logical that there should also be “unintelligent” or “less intelligent” races contemporaneous with the former. In contrast to this stance, Darwin himself was skeptical of the existence of any significant difference in mental capacity among the different “races.”

Rizal's mention of Darwin in the *Fili*, where he alludes to the principle of “sexual selection,” might give the impression that he had imbibed some Darwinian ideas (Darwin 1871, 273).

**La ley descubierta por Darwin la cumplía Paulita inconsciente pero rigurosamente: la hembra se entrega al macho más habil, al que sabe adaptarse al medio en que se vive . . . (Rizal 1891, 243)**

**Unconsciously, Paulita had complied with the laws Darwin had discovered, in spades. The female gives herself to the most able male, who understands how to adapt to the medium in which he lives. (Rizal 2011, 277)**

The Darwinian phrase “struggle for life” (from the complete title, *On the Origin of the Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for life*) is also cited in its well-known Spanish

version in the *Noli me tângere as lucha por la vida* (Rizal 1887, 271). The theory of direct Darwinian influence might therefore be true to a certain extent and might be the subject of further study, but, at least in this particular instance, he does not seem too Darwinian as much as he is “Spencerian.” However, it ought to be emphasized that the distinction between what has been retrospectively construed more rigidly as “Lamarckianism” and “Darwinism” was not so clear-cut in the nineteenth century. Rizal's conceptions may therefore either have come from a direct reading or interpretation of Darwin's texts themselves in an “adaptationist” direction, through exposure to the popular Spencerian interpretation of Darwin among the Spanish (or European) milieu in general, or through a reading of Spencer himself. This issue cannot be resolved at the present time. (Quite interesting is the fact that the first Spanish translation [1903] of Darwin's *The Expression of the Emotions in Man and Animals* [1872] was printed with an advertisement for Rizal's *Noli me tângere* along with all the most famous anarchist authors of the time [fig. 4].)

Rizal was apparently quite a fan of Spencer; he bought the latter's books: *Ceremonial Ynstitutions*, *Ecclesiastical Ynstitutions*, *Political Ynstitutions*, *The Data of Ethics*, *Man versus the State*, and *The Principles of Sociology* (De Ocampo 1960, 50). The fact that Spencer, the inventor of the phrase “survival of the fittest,” a phrase which appears in the *Fili* in its Spanish translation as “sobrevivan los más fuertes” (Rizal 1891, 54), which is almost completely forgotten today, can make it hard to believe that he was actually the most read social theorist and philosopher of the late nineteenth century. In Europe and the rest of the world, Spencer was at the time much more famous than either Darwin or Marx (he was buried in Highgate cemetery across from the latter) (Stocking 1962).<sup>5</sup>

Here is another note on the problem of translation. The passage on the “limited intelligence in races” was first published by Blumentritt (1897) in German translation in the *Internationales Archiv für Ethnographie* with the title “Dr. Jose Rizal (with a Portrait).” His translation from the Spanish is however puzzlingly inconsistent with Rizal's text. He translates “razas” (races) as *Völker* (“peoples”) rather than the correct German word *Rasse* (“race”), and then translates the phrase *razas inteligentes* (“intelligent races”) as *intelligente Völker* (“intelligent peoples”). He avoids all references to the biological “brain” and translates “cerebro” (brain) as *Intelligenz* (“intelligence”) and *trabajar con el cerebro* (“to work with the brain”) as *geistig zu arbeiten* (“to work intellectually”). These translational changes are

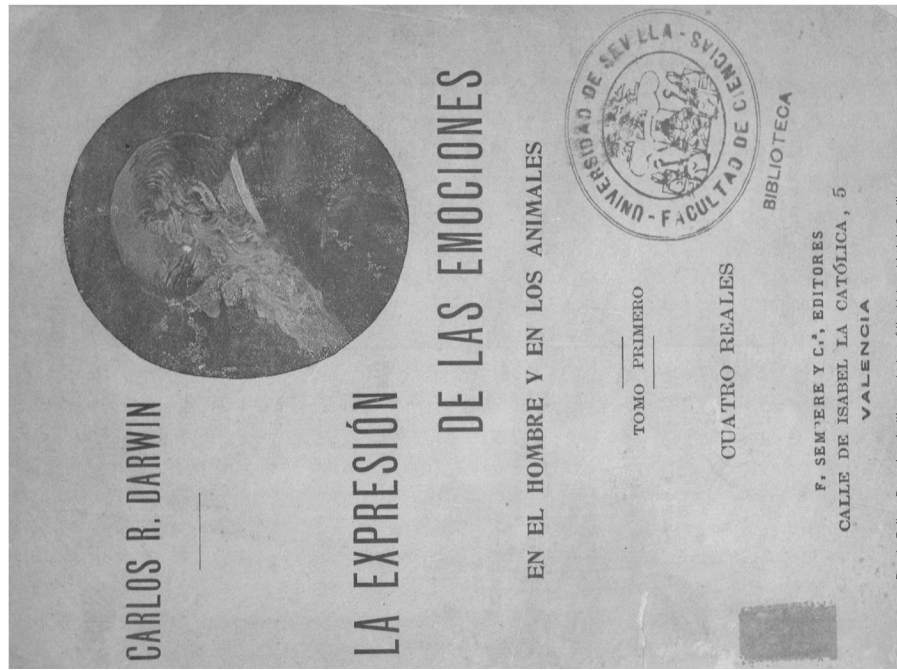
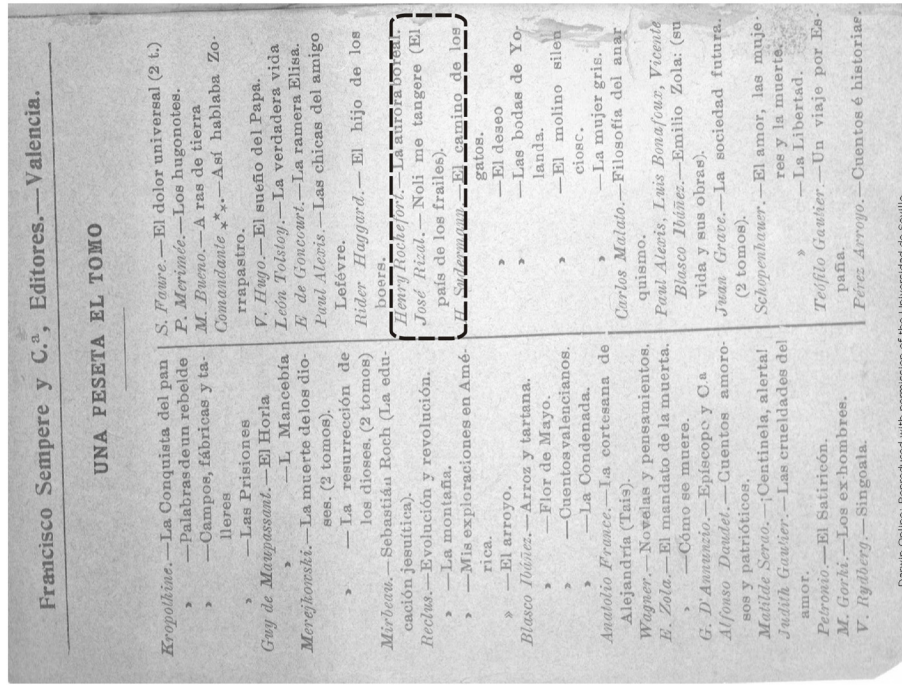


Fig. 4. *Noli me tangere* advertised in a 1903 Spanish translation of a book by Charles Darwin



done to such a degree as to misrepresent Rizal's thoughts in the direction of what might be termed Blumentritt's enlightened humanism. Below is Blumentritt's translation:

Mit der höheren Intelligenz verhält es sich wie mit dem Reichthum. Es giebt reiche und es giebt arme Völker, so wie es reiche und arme Individuen giebt. Der Reiche, der glaubt reich geboren worden zu sein, täuscht sich selbst. Er ist ebenso arm und nackt zur Welt gekommen, wie sein Sklave. Aber, was hier eintritt, ist das, dass er die Reichthüm ererbt, die seine Eltern erworben haben. Ich glaube demnach, dass auch die Intelligenz sich vererbt: Völker, welche unter gewissen speciellen Bedingungen sich genöthigt sahen, geistig zu arbeiten, haben ihre Intelligenz naturgemäss höher entwickelt und diese auf ihre Nachkommen vererbt, die sie weiter auf Zinsen legten. Die europäischen Völker sind reich (an Intelligenz), aber die gegenwärtigen (Völker Europa's) können nicht, ohne anmassend zu werden, behaupten, dass sie bei ihrem Entstehen auch schon so reich (an Intelligenz) gewesen sind; sie haben Jahrhunderte des Kampfes und Strebens, günstiger Conjecturen [?], der nöthigen Freiheit, vortheilhafter Gesetze, einzelner führender Geister bedurft, um ihren geistigen Reichthum auf ihre gegenwärtigen Nachkommen zu vererben. Die heute so intelligenten Völker sind es durch einen langen Process von Vererbung und Kampf geworden. (Blumentritt 1897, 91)

Higher intelligence is similar to wealth. There are rich and there are poor peoples, as there are rich and poor individuals. A rich person, who believes that he is born rich, deceives himself. He was born into the world just as poor and naked as his slave. But, what here comes into the picture is that he inherits the wealth, which his parents have acquired. I believe therefore that intelligence is also inherited [vererbt]: peoples, which under particular special conditions have seen it necessary to work *intellectually* [geistig], have naturally developed their intelligence to a higher degree which they then pass on to their offspring, with interest. The European peoples are rich (in intelligence), but the contemporary (peoples of Europe) cannot, without being arrogant, hold the opinion that they were from the beginning already so rich (in intelligence); they needed centuries

of struggle and effort, favourable conjunctures ["Conjekturen" is obviously a mistake. – RG] the necessary freedom, advantageous laws, some leading spirits, so they they could bequeath their *intellectual wealth* [geistigen Reichthum] to their present descendants. The *intelligent peoples* [intelligenten Völker] of today are so after a long process of heredity [Vererbung] and struggle. (italics added)

These apparently deliberate mistranslations are reproduced and amplified in the English translation of Ferdinand Blumentritt's piece, which was first printed in Singapore by Howard Bray and entitled "Biography of Dr. Jose Rizal, the Distinguished and Talented Philippine Scholar and Patriot, infamously shot in Manila on December 30, 1896" (Blumentritt 1898). Bray's translation from the German of Blumentritt's text renders the word that was in the original "brain" as "intellectual work" and also as "intelligence" (ibid.). Further, "intelligent races" becomes, quite inexplicably, "intellectual workers." "Races" becomes "nations." Compare the original quote above with Bray's version below:

With higher intelligence it is as with riches. There are rich and poor nations, the same as rich and poor individuals. The rich man who believes himself to be born rich, deceives himself. He came into the world just as poor and naked as the slave. He afterwards inherits the riches which his parents have acquired. So I believe that intelligence also is hereditary. *Nations* which, under certain special conditions, have found it necessary to *work intellectually*, have their *intelligence* naturally more highly developed, and bequeath it to their descendants, who in turn, put it out at interest. The European nations are rich (in intelligence) but the present (people of Europe) cannot, without being arrogant, assert that they were always so rich (in intelligence) since their formation; they have required centuries of struggle and warfare, suitable environment, the necessary freedom, advantageous laws, prominent guiding spirits, to acquire their intellectual riches, and bequeath them to their present descendants. The *intellectual workers* of to-day have become so by a long *evolution* of inheritance and struggle. (ibid., 13–14; italics added)

Another English translation, which appeared in *Popular Science Monthly* in 1902 and entitled "Views of Dr. Rizal, the Filipino Scholar, upon Race

Differences," was translated by R. L. Packard. Interestingly, the term "races" returns to this translation as the equivalent for "Völker" (peoples) but all the rest of the remaining terms reflect Blumentritt's interventions. "Brain" is translated as "mental powers" (quite literally from "geistig") and "intelligence." While "intelligent races" appears as "people who are intelligent" (Blumentritt 1902, 227–28).

Blumentritt's translation so departs from the original that it reveals how sensitive these issues of race, heredity, and intelligence are with respect to the appreciation and presentation of Rizal himself. It seems that Blumentritt was apparently all too ready to misrepresent Rizal's views in order to make these more acceptable to an enlightened and "advanced" European audience. All of these translations dilute, if not totally erase, the distinctly biologicistic direction of Rizal's reflections on limited intelligence.

Moreover, the fact that the translation by the National Historical Institute (Rizal 1992) is quite faithful and accurate makes it all the more puzzling why the implications of this passage have not been subjected previously to more careful scrutiny. A recent newspaper report (Cupin 2011) repeats only the first sentence of the pertinent quote, "Concerning the limited intelligence in races, after a detailed study of the subject, I believe like you do, that there is and there is none" and then glibly states that "Rizal denied the concept of race supremacy." The article goes on to say that, "Intelligence, [Rizal] argued, was something nations inherited. While European countries might have had an upper hand in intelligence, Rizal believed this was only so because of centuries of honing that intelligence—implying that eventually 'lesser' nations would have the chance to catch up." It avidly picks up on the notion that "there is no" limited intelligence in races but totally forgets the first part of the quote, which asserts and concedes that "there is" indeed a "limit to intelligence." Rizal's reference to "more developed brains" is transformed into "an upper hand in intelligence." These are exactly the same moves as in Blumentritt's mistranslation and Bray's and Packard's translations of his mistranslations.

Such mistranslations bring to mind a passage in Pramoedya Ananta Toer's (1980/2005) novel *Bumi Manusia (This Earth of Mankind)*, where Minke, the novel's hero, relates how his teacher, Mr. Lastendienst, once said,

Di bidang ilmu Jepang juga mengalami kebangkitan. Kitasato telah menemukan kuman pes, Shiga menemukan kuman dysenteria—dan

dengan demikian Jepang telah juga berjasa pada umat manusia. Ia membandingkannya dengan sumbangan bangsa Belanda pada peradaban. Melihat aku mempunyai perhatian penuh dan membikin catatan. Meneer Lastendienst bertanya padaku dengan nada mendakwa: Eh, Minke wakil bangsa Jawa dalam ruangan ini, apa sudah disumbangkan bangsamu pada umat manusia?(Pramoedy 1980/2005, 167–68)

In the field of science, Japan is also experiencing progress. Kitasato has discovered the plague microbe, Shiga discovered the dysentery microbe. In this way, Japan has done service to humanity. He compared this to Holland's contribution to civilization. Seeing that I was very attentive and made notes. Mr. Lastendienst asked me with an accusatory tone: Eh, Minke, representative of the Javanese race in this room, what has your race contributed to humanity?

Pramoedy's hero, Minke, could only reply that, at the moment, he had no answer to the question. Lastendienst's question is phrased rather differently in Max Lane's English translation as, "What has your nation contributed to humanity?" (Pramoedy 1996, 113). "Bangsa" is translated by Lane into its more common meaning as "nation" rather than the other meaning that the context of the passage calls for. In that context, it should have been translated as "race" (Stevens and Schmidgall Tellings 2004).

### Concluding Remark

Against all received opinion, Rizal seems to concur partially that the reason behind the lack of "great scientists" among the Malay-Filipino race is the "low mental capacity" (poco capacidad) or, in other words, "limited intelligence" (limitada inteligencia) of the *contemporary* indio. Indio inferiority in science is therefore (according to this view) not merely a result of a backward and brutalizing education at the hands of the friars, which darkens their minds and dims their natural intelligence, but is also due to a certain racial limitation. Rizal would add, however, that these deficiencies could be overcome through "struggle, wise combinations, liberty, laws, thinkers" and last, but not least, a better system of education. Might not this final turn in Rizal's mature thought, perhaps partly due to Spencer's influence, be considered a step backward into error? This might be the general opinion, especially

now that the scholarly estimation of Spencer and Lamarck and the scientific credentials of "race" itself have much declined since Rizal's time. It should be recognized that Rizal's deployment and combination of concepts such as "heredity," "intelligence," and "race" are in keeping with the theoretical innovations of European thinking on these subjects in the nineteenth century. What is necessary is a more comprehensive and less pious discussion of the discourse of "race" in Rizal and among his contemporaries to which Aguilar's excellent study (2005) has of late contributed substantially. Even if it had never been so clearly stated as it was in Rizal's letter to Blumentritt, it is undeniable that "race," as an effective category, had always been an integral, inescapable part of Rizal's thought from the very beginning. It could likewise be argued that the tendency to sweep these uncomfortable utterances from Rizal under the rug, and to remove his thought from the context of the racial and racist idioms of his time and milieu, has prevented a much more comprehensive and realistic understanding of the intellectual world that he inhabited.

### Notes

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- 1 This is probably the only instance where Rizal uses the word "materialista" in a context where it pertains to a philosophical position relevant to the modern scientific worldview. "Materialismo" in this sense probably received its most popular treatment in the book by Friedrich Albert Lange entitled *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart* (1866). This famous book was translated into French, English and also, after Rizal's execution, Spanish.
- 2 This reference to a certain Father Amat's book could not yet be determined at the present time.
- 3 "im Gegensatz zum Sein, zur Wirklichkeit ein Nichtwirkliches, eine Täuschung" (in contradiction to being [Sein], "unreality in the face of reality, an illusion") (Apel and Ludz 1958, 248).
- 4 Unfortunately I was not able to attend the conference panel where Ong (2011) delivered his paper.
- 5 "Not only was [Herbert] Spencer one of the most imposing intellectual figures of his generation to his European and American contemporaries, but, as we have seen, he was predominant among the Western social and political theorists translated into Japanese. It was Spencer rather than Darwin whose view of evolution got top billing . . ." (Thomas 2001, 162).

### References

- Aguilar, Filomeno V. 2005. Tracing origins: *Ilustrado* nationalism and the racial science of migration waves. *Journal of Asian Studies* 64(3): 605–37.
- Almario, Virgilio S., ed. 2001. *UP diksiyonaryong Filipino*. Quezon City: Sentro ng Wikang Filipino, Unibersidad ng Pilipinas.

- Apel, Max and Peter Ludz, eds. 1958. *Philosophisches wörterbuch*. Berlin: W. de Gruyter.
- Blumentritt, Ferdinand. 1897. Dr. Jose Rizal (Mit portrait) [Dr. Jose Rizal (with a portrait)]. *Internationales Archiv für Ethnographie* 10:88–92.
- . 1898. *Biography of Dr. Jose Rizal: The distinguished and talented Philippine scholar and patriot, infamously shot in Manila on December 30, 1896*, trans. Howard W. Bray from the original German, with notes and an epilogue. Singapore: P. Kelly and Walsh.
- . 1902. Views of Dr. Rizal, the Filipino scholar, upon race differences, trans. R. L. Packard. *Popular Science Monthly* 61:223–28.
- Copi, Irving M. 1954. Essence and accident. *Journal of Philosophy* 51(23): 706–19.
- Cupin, Bea. 2011. The compassionate scientist in Jose Rizal. Online, <http://www.gmanews.tv/story/225705/lifestyle/the-compassionate-scientist-in-jose-rizal>, accessed 1 Nov. 2011.
- Darwin, Charles. 1871. *The descent of man, and selection in relation to sex*. London: John Murray.
- De Ocampo, Esteban. 1960. *Rizal as a bibliophile*. Manila: UNESCO National Commission of the Philippines.
- Ganot, Adolph. 1866. *Traité élémentaire de physique* [Elementary treatise on physics]. Paris: Chez L'Auteur-Éditeur.
- . 1859. *Cours de Physique purement expérimentale* [Course on purely experimental physics]. Paris: Librairie Scientifique, Industrielle et Agricole.
- Gissis, Snait B. 2005. Herbert Spencer's two editions of the *Principles of Psychology*: 1855 and 1870/72. Biological heredity and cultural inheritance. In *Conference: A cultural history of heredity III: 19th and early 20th centuries*, 137–151. [Berlin]: Max-Planck-Institut für Wissenschaftsgeschichte.
- Guillermo, Ramon. 2009. Mga saliranin sa proyekto ng maugnaying Pilipino. In *Salin-suri: Panimulang pagmamapa ng mga larangan ng pag-aaral ng pagsasalin sa Filipinas*, ed. Galileo Zafra, 263–76. Quezon City: UP Sentro ng Wikang Filipino.
- Khantane-Langlois, Françoise. [2006?] Un siècle de physique à travers un manuel à succès: le traité de physique de Ganot [A century of physics through a successful textbook: Ganot's treatise on physics]. Online, [http://www.ampere.cnrs.fr/parcourspedagogique/zoom/oersted/pdf/Langlois\\_Ganot\\_SFC\\_2006.pdf](http://www.ampere.cnrs.fr/parcourspedagogique/zoom/oersted/pdf/Langlois_Ganot_SFC_2006.pdf), accessed 1 Nov. 2011.
- Lange, Friedrich Albert. 1866. *Geschichte des Materialismus und Kritik seiner Bedeutung in der Gegenwart* [The history of materialism and criticism of its present importance]. Iserlohn: J. Baedeker.
- Lefèvre, Wolfgang. 2005. Inheritance of acquired characters: Heredity and evolution in late nineteenth-century Germany. In *Conference: A cultural history of heredity III: 19th and early 20th centuries*, 53–66. [Berlin]: Max-Planck-Institut für Wissenschaftsgeschichte.
- Lopez-Beltran, Carlos. 2004. In the cradle of heredity: French physicians and *L'Hérédité Naturelle* in the early 19th century. *Journal of the History of Biology* 37:39–72.
- Novak, Michael. 1956. Toward understanding Aristotle's categories. *Philosophy and Phenomenological Research* 26(1): 117–23.
- Ong, Perry. 2011. José Rizal is a Darwinist but he is no Darwin. Paper presented at the conference on "Rizal in the 21st Century: Local and Global Perspectives," University of the Philippines Diliman, Quezon City, 22–24 June.
- Pramoedya Ananta Toer. 1980/2005. *Bumi manusia* [This earth of mankind]. Jakarta: Lentera Dipantara.
- . 1996. *This earth of mankind*, trans. Max Lane. New York: Penguin Books.
- Ramos, Miguel. 1839. *Elementos de física y química*. Madrid: Imprenta y Librería de Don Eusebio Aguado.
- Rizal, José. 1887. *Noli me tângere: Novela tagala*. Berlin: Berliner Buchdruckerei-Actien-Gesellschaft.
- . 1891. *El filibusterismo: Novela filipina*. Gent: Boekdrukkerij F. Meyer-Van Loo.
- . 1911. *El filibusterismo*, trans. Patricio Mariano. Maynila: Pambansang Komisyon ng Ikasandaang Taon ni Jose Rizal.
- . 1929. *Filibusterismo*, trans. Pedro Gatmaitan. Manila: P. Sayo Bookstore.
- . 1956. *Ang El Filibusterismo sa wikang Tagalog karugtong ng Noli me Tangere*, trans. Servando de los Angeles. Manila: De los Angeles.
- . 1957. *El filibusterismo. Special offset reproduction of the original manuscript*. Manila: Jose Rizal National Centennial Commission.
- . 1961b. *Cartas entre Rizal y El Profesor Fernando Blumentritt*, vol. 2. Manila: Comisión Nacional del Centenario de Jose Rizal.
- . 1992. *The Rizal-Blumentritt correspondence*, vol. 2. Manila: National Historical Institute.
- . 1998. *El filibusterismo: Karugtong ng Noli Me Tangere*, trans. Virgilio S. Almario. Quezon City: Adarna House.
- . 2011. *El filibusterismo*, trans. Harold Augenbraum. New York: Penguin Books.
- Stevens, Alan M. and A. Ed Schmidgall Tellings. 2004. *Kamus lengkap Indonesia-Inggris* [A comprehensive Indonesian-English dictionary]. Athens, OH: Ohio University Press.
- Stocking, George Jr., W. 1962. Lamarckianism in American social science: 1890–1915. *Journal of the History of Ideas* 23(2): 239–56.
- Thomas, Julia Adeney. 2001. *Reconfiguring modernity: Concepts of nature in Japanese political ideology*. Berkeley: University of California Press.
- Vickers, Brian. 1992. Francis Bacon and the progress of knowledge. *Journal of the History of Ideas* 53(3): 495–518.

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