Endmatter

ARTIFICIAL INTELLIGENCE AND DE LAS CASAS: A 1492 RESONANCE

by Alejandro García-Rivera

Abstract. A comparison is made between two unlikely debates over intelligence. One debate took place in 1550 at Valladolid, Spain, between Bartolomé de las Casas and Juan Gines de Sepúlveda over the intelligence of the Amerindian. The other debate is contemporary, between John Searle and various representatives of the "strong" artificial intelligence (AI) community over the adequacy of the Turing test for intelligence. Although the contemporary debate has yet to die down, the Valladolid debate has been over for four hundred years. The question asked here is whether the contemporary debate can profit from the previous one. The common bond providing the basis for contrast is the issue of the "other" which is present in both debates. From this contrast, the observation is made that the question of meaning is intimately tied to the question of intelligence.

Keywords: America; artificial intelligence; Chinese room; de las Casas; 1492; New World; Searle; Turing.

As I was preparing for this presentation, my daughters were anxiously preparing for the Iowa test. The Iowa test is a standardized test designed to rank the "level" of each student in various subjects. The girls were scared and nervous and it took all my fatherly know-how to help relieve their anxiety. Their plight, however, evoked submerged memories of a test I took not too long ago: my citizenship test at the Federal Building in Cincinnati, Ohio. It was a comic affair. The citizenship test is a strange institution. It has been taken by thousands of immigrants who knew little if any English. This seems

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[*Zygon*, vol. 28, no. 4 (December 1993).]
 ISSN 0591-2385

paradoxical in light of the "strict" requirement that two citizens must testify that the citizen-to-be truly does speak English.

I took my citizenship test as a graduate student working on my doctorate in physics. The first part of the test consisted of a review of my educational background: graduated from Miami University with honors, doctoral fellow in physics at Ohio State, and so on. As the examiner rolled out my painfully achieved degrees of higher education, I thought I would breeze through this part of the test. But then the unexpected happened; my examiner prepared to give me a literacy test! After that long review, I had to prove that I could read "Dick and Jane go up the hill." I was prepared. After all, I had just passed my comprehensive exams in physics.

What followed was more astounding. Remember the two citizens willing to testify that the applicant can speak English? There was a slight catch. The requirement does not require that the witnesses themselves must speak English. My witnesses were citizens, actually friends of the family, but they did not, unfortunately, speak English. When my illustrious examiner asked them if I could speak English, they did not understand: *"Qué dice?"* they asked. Trying not to panic, I asked my examiner if I could translate his question to them: *"Dice si hablo Inglés."* ("He asks if I speak English"), I translated. *"Sí! Sí! El sí habla Inglés,"* my faithful witnesses responded. I translated back: "They say that I indeed do speak English." Without giving any sign that he was aware of the irony of the situation, my examiner marked off the appropriate mark on his tally sheet and I became another English-speaking citizen of the United States.

I suppose by now you are wondering what all this has to do with artificial intelligence or 1492 or de las Casas. This paper has to do with tests, tests that try to measure intelligence. These tests are nothing new. They have given rise to furious debate throughout the centuries. One of these tests occurred in 1550 at the city of Valladolid, Spain, between the great champion of the indigenous Americans, Bartolomé de las Casas, and the great Scholastic, Juan Gines de Sepúlveda. This test took the form of a debate over the intelligence of the Amerindian.

The other debate is contemporary. It is taking place between John Searle and proponents of strong AI; i.e., members of that discipline of computing science known as artificial intelligence who make the "strong" assertion that artificial intelligence is possible. My purpose in this paper is not to endorse or bury AI, but to show the similarities and differences between the contemporary and the 1550 debates. This comparative approach, I feel, points to a way in which theology can contribute to what is apparently a nontheological issue. Likewise,

this method points out how science in some cases is also asking theological questions.

Let us start with the earlier debate. In 1550, King Ferdinand of Castile called together a *junta,* an open debate between the representatives of the three branches of learning which had some claim to authority on moral issues—theology, civil, and canon law. The *junta* was watched over by select members of the religious orders and the royal councils. Formal, prepared speeches were given with little, if any, interaction. These speeches were then submitted to the king as a written opinion or *testimonio.* Usually, these *testimonios* were unread and lost within the huge Spanish bureaucracy, but in 1550, the issue was a crucial one. The formal question for the *junta* of 1550 concerned rights of conquest: By what right had the Crown of Castile occupied and enslaved the inhabitants of territories to which it made no prior claims? (Pagden [1982] 1986). As such, this question could not be answered with the categories available to Spanish Scholasticism. Such lack of categories eventually shifted the debate from one concerning legal categories to one concerning the nature and intelligence of the Amerindian.

The *junta* Scholastics had at their disposal three major categories (taken from the works of Aquinas and Cardinal Cajetan) by which the Crown could justify conquest. One could lawfully subject a people de facto; i.e., people who live in lands that had once formed part of the Roman Empire and thus came within the *dominium* of the Church. One could also lawfully subject people *de iure,* i.e., people outside the former boundaries of the Roman Empire but who were already lawfully subject to a Christian prince. Finally, a third category existed: the *infideles.* This category was further subdivided into those *vincibly ignorant* and those *invincibly ignorant.* The vincibly ignorant were those people who had had an opportunity to hear the gospel but had rejected it. These people had chosen to remain ignorant and thus could be lawfully conquered. The vincibly ignorant included Jews and Muslims. The invincibly ignorant, however, had not had an opportunity to hear the gospel. These people could be evangelized but not conquered.

Given these four categories *de iure,* de facto, vincibly and invincibly ignorant, it was obvious to the *junta* that the Amerindians fit the last one, the invincibly ignorant. To opt for this category, however, would have been problematic for the Crown, for there existed already a de facto situation of conquest. As one can see, the Royal Crown was up the legal creek without a paddle.

The pro-Crown side of the *junta* (represented by Sepúlveda) came up with an ingenious solution to this legal connundrum. By asking

the question of the ontological status of the Amerindian, that is, the nature of their humanity, they were able to shift the debate from a legal one to one concerning natural categories. This shift focused the natural question on whether it was possible for Amerindians to be "ignorant." If Amerindians could be intelligent, they could also be ignorant and the Crown would have no option but to apply the invincibly ignorant category to them. This, however, was not an option. Thus, the debate hinged on whether the Amerindian could be shown to be *naturally* intelligent.

Gines de Sepúlveda argued:

> [I]f you know the customs and nature of the two peoples [Spaniards and Native Americans], that with perfect right the Spaniards rule over these barbarians of the New World and the adjacent islands, who in wisdom, intelligence, virtue, and *humanitas* are as inferior to the Spaniards as infants to adults and women to men. There is as much difference between them as there is between cruel, wild peoples and the most merciful of peoples, between the most monstrously intemperate peoples and those who are temperate and moderate in their pleasures, that, is to say, between apes and men. (Sepúlveda [1550] 1892)

De las Casas took a different tack. By concentrating on the Amerindian's willingness and receptivity to the gospel, de las Casas aimed to show that such receptivity was also a mark of intelligence. Thus, he countered:

> [W]hatever I say about the faith of the Indians I have seen with my own eyes, not only in one place or one nation but in very many. They honor the holy sacraments of the [Roman] Catholic Church and receive them with a great indication of piety. If they cannot be helped by the sacraments because of a lack of priests, these sincere people grow pale, lament, grieve and weep. Again, at the time of death you may see in them a wonderful concern about their salvation and their soul—a clear sign of eternal predestination that is characteristic of Christians. (de las Casas [1550] 1988).

De las Casas was a tough adversary, and he had made a strong and convincing argument for the intelligence of the Amerindian. Nonetheless, the interests of the Crown dominated and the question was settled by resurrecting Aristotle's category of the natural slave (Hanke 1959). This was not a legal category like the civil slave, but a particular category of nature. Aristotle's natural slave is someone whose intellect has failed to master the passions. Juan de Matienzo writing in the *Gobierno del Peru* described the Amerindians as

> participants in reason so as to sense it, but not to possess or follow it. In this they are no different from the animals (although animals do not even sense reason) for they are ruled by their passions. This may be clearly seen because for them there is not tomorrow and they are content that they have enough to

eat and drink for a week, and when that is finished they search for [the provisions for] the next. (Pagden [1982] 1986, 45)

The legal question of 1550 became a question over the natural intelligence of the Amerindian. This test on intelligence had tragic results, and its effects are still being felt today.

This paper is also about another test, the Turing test, a test that has also stirred a great debate. The debate is taking place within the scientific community that is working on what is known as AI, artificial intelligence. These cerebral people claim that they can model a set of computer instructions in such a way that if we communicated with an artificially intelligent computer behind a curtain, we would not be able to tell it apart from a human being. They also claim that they will eventually come up with a set of computer instructions (an algorithm) which will allow a computer to compute intelligent answers to any questions we might ask. Indeed, they claim, someone who could not see the computer or know that one was behind the curtain would simply assume that they were talking to a regular person.

The above is known as the Turing test. It is a test devised by the father of computing science, Allan Turing, in anticipation of the powerful potential he foresaw for his creation. His test remained a curiosity through the 1940s up until now, when these powerful computers became a near-certain reality. The imminence of the development of computers powerful enough to simulate intelligence[1] has suddenly made Turing's test both a claim and a question of profound significance. John Searle, a philosopher at the University of California, Berkeley, became aware of the significance of the claims being made by the AI community and responded with a strong argument against their position. Searle conjured up an ingenious thought experiment known as the Chinese room to discredit the validity of Turing's test as a measure of intelligence. By doing so, Searle has planted himself in the midst of a furious debate that shows no sign of ceasing.

The Chinese room thought experiment is as follows: Imagine a room with a curtain. Inside the room are baskets containing the sets of Chinese characters. Also imagine a book correlating one Chinese character with another in such a way that if the Chinese characters that are being sought make up a question, then the Chinese characters they match make up an answer to that question. The matching of Chinese questions to Chinese answers constitutes an algorithm. This is the type of operation a computer does best. Now, instead of a computer, let us assign a human being to receive Chinese

characters, look them up in the book, and then pick out the corresponding answers from the baskets. This human being, however, does not speak any Chinese!

Now let us apply our Turing Test. A Chinese person stands outside the curtain and writes out a question in Chinese characters. He places the question inside the curtain, where our non-Chinese-speaking human being matches the characters in the book and collects the corresponding matches from the baskets. The characters are then given back to the Chinese person outside the curtain, who sees an intelligent answer, mutters to himself, and walks away convinced that he has communicated intelligently with another human being.

Searle's point is that, although an algorithm was performed, the one who performed it had no understanding of what happened. The non-Chinese speaker inside the curtain cannot read Chinese, and as far as he is concerned, no understanding has occured. The question asked by the Chinese person outside the curtain is but a bunch of meaningless squiggles. Thus, says Searle, Turing's test fails. The "computer," an intelligent person, unintelligently manipulated meaningless squiggles. The conclusion of the Chinese person outside the curtain is false; no meaningful action took place behind the curtain! The AI community has responded vigorously against Searle's Chinese room argument, but there is no doubt that it is a serious challenge to their claim.

This paper, however, is not prepared to pass judgment on the adequacy of Searle's argument, but to make a connection to de las Casas and the Valladolid debate. Searle's Chinese room reminds me of the room at the Federal Building where my "witnesses" judged me capable of speaking English even though they did not understand a word of it themselves. The room at the Federal Building in Cincinnati and Searle's Chinese room are about tests without meaning. The question Searle is introducing to challenge Turing's test may be formulated as follows: Can one talk about intelligence without also talking about meaning?

This brings me to de las Casas. One may see the debate in his day as a debate over an inverted version of Turing's test. In this case, it is not a machine that is raising the question of intelligence, but human beings unlike ourselves (i.e., who speak another language) that are raising the question. Whereas Searle is concerned with *artificial intelligence,* the intelligence of nature brought closer to humanity, de las Casas was concerned with *natural intelligence,* humanity brought closer to nature. The common element between Searle's approach and that of de las Casas is the introduction or acknowledgement of the "other" into the consideration of measuring

intelligence. De las Casas based his defense of the Amerindian on the acknowledgement that there existed an "other" who did not have to look or sound or act like "us" to be human. Searle, likewise, introduced a non-Chinese-speaking "other" in order to ask the question of meaning in the Turing test.

The approaches of Searle and de las Casas show how the "other" wreaks havoc with the issue of intelligence. The question of meaning, after all, has a corollary: Where is meaning to be found? Intelligence seems to be most evident with people of our own kind, and meaning is based on common experience. For example, let us take the example of Columbus. The day of Columbus's first meeting with the Tainos of San Salvador (12 October 1492), he wrote, "If it please Our Lord, at the moment of my departure I shall take from this place six of them to Your Highnesses, so that they may learn to speak" (Todorov 1984, 29). Columbus's first reaction to meeting people whose experience was fundamentally different from his was the denial that they were capable of intelligent communication.

The confusion over meaning and intelligence had tragic results for the Amerindians. The tragedy continues to our day. I need not go into much detail about the experience of minorities in this country with IQ tests. There is, however, another lesson to be learned from these debates. Can questions about nature be so simply divorced from questions dealing with our being and nonbeing? Can nature and spirit be so easily divorced? The experience of indigenous Americans with Europe has many lessons to teach a society which might someday create artificial intelligence.

First, if we were able to create artificially intelligent machines, we would have to recognize that such intelligence is tied to meaning. Where there is intelligence, there is also meaning. We ought to realize that intelligent beings, be they machines or human, are also meaningful beings and not natural slaves. Secondly, we would have to recognize that an artificially intelligent machine would be more of an "other" than an "us." As such, a Turing test would not be enough to test for the sentience of a machine. Turing tests test for "us-ness," not for "otherness." Without a test for "otherness," it might be possible to create an artificially intelligent machine without knowing it and then inadvertently take its life or its freedom.

This is one of the lessons and a warning from Valladolid. We are entering a new world where the interface between humanity and the machine is growing ever narrower. As students of religion and as people concerned with values and meaning, we ought to be concerned about getting ready for the discovery of a new "America." This new "America" lies just beyond the horizon. We are catching

glimpses of bonfires in the darkness and driftwood from its shores keep knocking against our boats. We can sail along ignoring the signs of portentous change to come or we can start to get ready for the new world that lies just ahead.

NOTES

1. IBM's chess computer "Deep Thought" ranks among the top forty chess players, flesh or metal, with U.S. Federation rating of 2552. It recently narrowly lost a game to chessmaster Anatoly Karpov (rating of 2850) in a game at the Harvard campus on 2 February 1990 ("Endgame," 1990).

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