

# Between Divinity and Dullness: The Advent of Personal Computers in Italian Literature

Eleonora Lima

Volume 41, Number 1, 2020

URI: <https://id.erudit.org/iderudit/1087320ar>

DOI: <https://doi.org/10.33137/q.i.v41i1.35893>

[See table of contents](#)

Publisher(s)

Iter Press

ISSN

0226-8043 (print)

2293-7382 (digital)

[Explore this journal](#)

Cite this article

Lima, E. (2020). Between Divinity and Dullness: The Advent of Personal Computers in Italian Literature. *Quaderni d'Italianistica*, 41(1), 5–42.  
<https://doi.org/10.33137/q.i.v41i1.35893>

Article abstract

This article examines the cultural impact of personal computers in Italian literature in the first decade of their mass diffusion (from the mid-1980s to the second half of the 1990s) through the analysis of four texts written by some of the most respected writers of the time: Primo Levi's article "Personal Golem" (1985), Umberto Eco's novel *Il pendolo di Foucault* (1988), Francesco Leonetti's novel *Piedi in cerca di cibo* (1995), and Daniele Del Giudice's story "Evil Live" (1997). More than simply addressing the advent of personal computers, what these texts have in common is the use of religious images and metaphors in order to make sense of the new technology. This study aims at showing how this frame of reference served the four writers in expressing the contradictions inherent to the machine. Bulky and tangible because of its hardware, but animated by an elusive and mysterious software, the personal computer was perceived at the same time as a dull office appliance and a threatening virtual entity. Finally, by showing how timely and well-informed these literary works on the impact of PCs are, this article wants to make the case for considering the role of literature in shaping computer culture.

BETWEEN DIVINITY AND DULLNESS:  
THE ADVENT OF PERSONAL COMPUTERS IN ITALIAN  
LITERATURE\*

ELEONORA LIMA

*Abstract:* This article examines the cultural impact of personal computers in Italian literature in the first decade of their mass diffusion (from the mid-1980s to the second half of the 1990s) through the analysis of four texts written by some of the most respected writers of the time: Primo Levi's article "Personal Golem" (1985), Umberto Eco's novel *Il pendolo di Foucault* (1988), Francesco Leonetti's novel *Piedi in cerca di cibo* (1995), and Daniele Del Giudice's story "Evil Live" (1997). More than simply addressing the advent of personal computers, what these texts have in common is the use of religious images and metaphors in order to make sense of the new technology. This study aims at showing how this frame of reference served the four writers in expressing the contradictions inherent to the machine. Bulky and tangible because of its hardware, but animated by an elusive and mysterious software, the personal computer was perceived at the same time as a dull office appliance and a threatening virtual entity. Finally, by showing how timely and well-informed these literary works on the impact of PCs are, this article wants to make the case for considering the role of literature in shaping computer culture.

In a 1972 poem titled "Nel Duemila" and published in 1989 in *Diario Postumo*, Eugenio Montale bid his farewell to the world of letters, where computers were

---

\* This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 786479. (MAREITA).

about to replace the writer's pen: "Eravamo indecisi tra / esultanza e paura / alla notizia che il *computer* / rimpiazzerà la penna del poeta" (21).<sup>1</sup> As a new era was rapidly approaching, the poet nostalgically declared himself unprepared. Indeed, momentous changes were imminent in the technology: a mere ten years later, in 1982, the personal computer was named as 'Person of the Year'—better yet: 'Machine'—by the American magazine *Time*. Never before had an inanimate object received such honour—planet Earth was nominated only in 1988—, joining a long list of politicians, scientists, monarchs.<sup>2</sup> The cultural revolution brought by the new technology, as Montale predicted, deeply affected the way writers performed and conceived their literary work. Previously, in the age of mainframe computers, machines were bulky, economically inaccessible to most, and generally considered as props for sci-fi novels, likely to replace the human race. The advent of personal computers brought with it a swift change: authors found themselves sharing their desk with this once mysterious technology. This proximity was to change their mind about its socio-cultural role and impact on literature.<sup>3</sup>

Recognizing the advent of personal computing as a pivotal moment in the history of writers' involvement with digital culture, this article investigates how four Italian authors—Primo Levi, Umberto Eco, Francesco Leonetti, and Daniele Del Giudice—depicted the dawn of society's mass computerization in works written between the mid-1980s, when PCs became widely marketed and accessible (Abbate, "Getting Small"; Ceruzzi, *A History of Modern Computing* 243–295;

---

<sup>1</sup> "We were torn between/ fear and excitement/ at the news that the *computer*/ will soon replace the poet's pen" (here and henceforth all translations are mine).

<sup>2</sup> *Time's* editorial board made the announcement on December 26, 1982 and the issue crowning the PC "Machine of the Year" was published on January 3, 1983. The cover, under the title "The Computer Moves In," showed a plaster-made man sitting down at an old table, with his hands resting on his knees and staring at the gleaming screen of a personal computer, whose slick and modern design clashes with the other elements in the picture.

<sup>3</sup> Thomas R. Reid writes about the change in attitude towards computers: "There was a time—when computers were huge, impossibly expensive, and daunting even to experts—when the sociological savants regularly warned that ordinary people could become pawns at the hands of few corporate and governmental Big Brothers that could afford and understand computers. [...] In the real 1984, the stereotypical computer user had become a Little Brother seated at the keyboard to write his seventh-grade science report" (181).

Campbell-Kelly at al. 229–251),<sup>4</sup> and the late 1990s, when the advent of the World Wide Web prompted another change of paradigm.<sup>5</sup>

To do so, this article focuses on a particular angle or mode of representation: the recurrence of religious metaphors and imagery to make sense of the new technology. Such uses should not elicit surprise: the idea of computers as mechanical brains without bodies—thus pure will—ruling over humanity easily prompts their perception as godly creatures. Yet, as this study shows, the religious metaphor gained momentum with Italian writers *concurrently* with the shift from mainframe to personal computing. Such metaphors and imagery allowed them to express two crucial tensions inherent to computing at the end of the twentieth century. First, the one between the materiality of the hardware, rendered apparent with the transformation of computers into pieces of household furniture, and the disembodied nature of the software, which, from the 1980s, seemed to

---

<sup>4</sup> The technological progress making the advent of small and affordable computers possible was the passage from transistors to microchips (or integrated circuits), first invented in 1958–59 by Jack Kilby and Robert Noyce (Reid) and then perfected in 1970 by Federico Faggin, whose contribution led to the first ever microprocessor, the Intel 4004 in 1971 (Gallippi; Faggin). The story of personal and home computing, indeed, began in the 1970s: the very term “personal computer” was coined in 1975 to describe Altair 8800, and Apple II, Commodore PET, and IBM 5100, three of the first portable computers, were all commercialized in 1977 (Ceruzzi, “From Scientific Instrument to Everyday Appliance,” 1–31). It took some time, though, for the new device to penetrate the market and this is true especially for Italy, where the number of desktop computers sold grew from 5.500 in 1979, to 40.800 in 1983. An impressive and yet limited increase when compared to the 130.400 PCs sold in Germany in 1983, and the 371.000 installed in the USA in 1979 (Zane 116). The cultural impact on Italian society, though, was immediate: Marcello Zane explains that the amount of computer magazines and newspaper articles long surpassed the number of PCs sold (174). Italians were reading and discussing the new technology but were not yet convinced enough to buy it.

<sup>5</sup> While the first Internet communication dates back to October 29, 1969, when a message was sent via ARPANET from UCLA to Stanford Research Institute (Hafner and Lyon 151–59), it was only with the advent of the World Wide Web, invented by CERN engineer and computer scientist Tim Berners-Lee in 1989 (Gillies and Cailliau), that the Internet started growing into the mass phenomenon we now know (Abbate, *Inventing the Internet* 214–20). On August 6, 1991, the first webpage was launched. In 1993, 623 websites existed worldwide and a year later their number reached 10.022 (Gray). Italy was the fourth European country to be connected to the Internet, following Norway, the U.K., and West Germany, and the first message was sent via ARPANET from the Centro Nazionale Universitario di Calcolo Elettronico in Pisa to the Roaring Creek Earth Station in Pennsylvania on April 30, 1986 (Ruffilli). The first Italian website, hosting the “Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna” went live in 1993 (Sgherza).

increasingly regulate every aspect of life (Costa; Maldonado). Indeed, religious objects and images are at the same time tangible and immaterial, thereby serving as hypostases of spiritual entities and concepts. Second, the tension between the attractive and intimidating power of computer software, envisaged as an esoteric force capable of hatching secret plots, and the sudden disappointment at the technology's incapacity to deliver on its promises of being a true form of intelligence (Zane 181–96). These two views are not held by different groups of writers, but are instead displayed in the work of the same author or even in the same text, so that the representation of personal computers oscillates between the two traits of divinity and dullness.

Such polarized discourse is the result of the narrativization of the two main common reactions to the mass diffusion of desktop computers: societal panic and unease at the prospect of being psychologically manipulated, or even rendered unemployed by machines on the one hand; indifference towards what were considered glorified typewriters, overly hyped by tech companies, on the other. This convergence between literary and public discourse is particularly significant insofar as writers have, from the very beginning, been involved in the conversation surrounding digital technologies.<sup>6</sup> In fact, Italian authors did not discover the existence of computers until the mid-1980s,<sup>7</sup> and it was only then that they started using them in their daily work. While this new proximity profoundly changed Italian authors' perception of the technology, it has never been investigated before. This article seeks to fill this gap.

---

<sup>6</sup> Indeed, this study is part of a larger research project that will result in a volume entirely dedicated to the mutual influence and exchanges between Italian literature and computer culture from the mid-1950s to the present.

<sup>7</sup> A succinct survey of the most significant examples of Italian writers' early encounters with computer culture must include Italo Calvino and his interest in information science and in the potential applications of computer combinatory logic to literature (Cronin; Lima 101–166), summarized in his essay "Cybernetics and Ghosts" (1967). Nanni Balestrini, too, experimented with computer-generated literature (Renello), both in verse and prose, with his electronic poem "Tape Mark I" (1961) and the "romanzo multiplo" *Tristano* (1966). Furthermore, some of the most influential writers of the 1960s—such as Paolo Volponi, Leonardo Sinisgalli, Ottiero Ottieri, Elio Vittorini—were employed at Olivetti (Lupo), a company that in ten years, from 1955 to 1965, created the first electronic computer laboratory in Italy, built the first Italian mainframe computer, Elea 9001, and launched the world's first desktop computer, Programma 101 (Parolini).

It was only recently that Alessandro Baricco, in his book titled *The Game*, denounced writers' lack of interest for digital culture and called for a digital Renaissance. It is hard to say if the plea originates in genuine lack of knowledge or feigned ignorance designed to allow the author to style himself as the prophet of a long-awaited truce between humanists and technologists. Whatever the answer, this study will reveal the plea as hollow: Italian literature left Crocean languor behind long before the coming of Baricco.

### **Primo Levi and his personal Golem**

Among the earliest, self-declared personal computer enthusiasts among Italian writers is Primo Levi. In 1984, when the market was just starting to open up to the new technology, Levi bought his first desktop computer—an Apple Macintosh, as he recounts in an interview published in November 1984 in the newspaper *La Stampa*. Invited to address the question “can poetry get along with computer?,” Levi, in the brief text, speaks about the difficult and exciting aspects of his learning experience with the machine and reflects on its impact on his writing routine. At first intimidated and puzzled by the jargon of the instructions booklet—a glorious example of what Italo Calvino once called “antilingua” (122)—, Levi finds a patient teacher in his son Renzo,<sup>8</sup> who reveals to him the secret to personal computing: practice, not theory, is the only path to learning. Most crucially, trying to understand how the machine works is as pointless as it is old-fashioned. “Tu appartieni all’austera generazione di umanisti che ancora pretendono di capire il mondo intorno a loro. Questa pretesa è diventata assurda,”<sup>9</sup> the young teacher reproaches Levi (Levi, *Other People's Trade* 230).

There is an important contradiction at play in this otherwise common story of fathers being schooled by their tech-savvier sons: it is the previously mentioned tension between the materiality of personal computers, requiring a practical trial and error approach, and their elusive quality, as they function according to unintelligible mechanisms. That Levi was well aware of the two conflicting aspects

---

<sup>8</sup> The identity of the young man helping Levi is not revealed in the article but is confirmed by Marco Belpoliti in his 2019 article “Levi e il Golem Mac,” dedicated to the author’s relationship with his computer.

<sup>9</sup> “You belong to that austere generation of humanists who still expect to understand the world around them. That expectation has become ridiculous.”

is immediately evident from the article's title, "Personal Golem,"<sup>10</sup> justified by the author's choice to compare his Apple Macintosh to the anthropomorphic being of Jewish folklore. Taking up for himself the role of the Rabbi of Prague, Levi recounts giving life to his digital Golem by inserting in its mouth-like opening not some words from the Torah, like in the original story, but a floppy disk. The comparison successfully paints the picture of a bulky material shell magically coming to life when provided with a written code—the code serving the function of the sacred text. There is, however, a significant discrepancy between Levi's 'personal Golem' and the one of the original legend: the latter ends up revolting against its creator—the details vary depending on the version—and it is only by destroying it that the Rabbi manages to put an end to the creature's raging fury. Levi's servant, instead, shows no sign of restlessness: in fact, it is so docile and friendly that its buzzing sound reminds the writer of a purring cat: "Quando l'ho soddisfatto, ronza somnesso facendo le fusa come un gatto contento"<sup>11</sup> (*Other People's Trade* 232).

This is not the first time the story of the Golem and the Rabbi of Prague has been used to metaphorically describe human-computer relationship. The most illustrious precedent is the book written in 1962 by Norbert Wiener, the father of cybernetics, titled *God & Golem, Inc.: A Comment on Certain Points Where Cybernetics Impinges on Religion*, in which the Jewish agnostics scientist reflects on the possible religious connotation of Artificial Intelligence. Moreover, in Western culture, the Golem, as well as Adam, is an ever-present archetype for any narrative involving humanoid robots and sentient machines (Lachman; Lem; Longo; Markowitz 34–38; Rapoport). To understand why Levi joined this tradition but chose to compare his Macintosh to a tamed and subservient version of the classic rebelling Golem, we must consider the author's broader meditation on the effects of electronic technologies and connect it to the general discourse surrounding personal computers in the mid-1980s.

In 1971, in his book *Vizio di forma*, Levi published a story titled "Il servo," a more faithful rewriting of the Golem legend, but in this case the narration ends with the expected destruction of the disobedient creature. The clay being of Levi's

---

<sup>10</sup> When Levi republished the article in the volume *L'altrui mestiere*, he changed the title into "Lo scriba." Levi also discussed the impact of desktop computer on his work as writer in the articles "La poesia può andare d'accordo col computer?", published on the computer magazine *Genius* (January 1985, 11–12).

<sup>11</sup> "When I've satisfied its hunger, it buzzes quietly, purring like a contented cat."

rewriting rejects its role of servant—“il Golem era un servo che non voleva essere un servo”<sup>12</sup>—and obeys only some of the Rabbi’s orders, the ones it deems as falling within its duties: “Non intraprendeva nulla senza che Arié glielo ordinasse, ma non intraprendeva tutto ciò che Arié gli ordinava”<sup>13</sup> (230, 232). This unruliness and willingness to discriminate between commands lead the Golem to rebel against its creator when he forces it to break the Sabbath to chop wood. The creature, caught between the conflicting laws of two masters—the Rabbi’s and God’s—, starts destroying its surroundings. It stops only when its creator manages to pull the Torah from its back, which prompts the Golem to fall apart.

While the intricate subtextual philosophical meditations in “Il servo” have been investigated by many critics, (Amsallem; Antonello “La materia, la mano, l’esperienza” 100–02, Lollini; Pianzola 191–251; Ross 109–22), what matters for our analysis is that the sense of anxiety and dread present in this story is completely absent in “Personal Golem.” While the two texts belong to different genres—one being a work of fiction, the other a magazine article—it is undeniable that Levi’s attitude towards ‘thinking machines’ had deeply changed in those fifteen years. In “Il servo,” the Rabbi commits the unforgivable mistake of treating the Golem as an inert, and thus completely subservient, creature. What is more, the incompatibility between commands and software—the Rabbi’s orders and the Torah—triggers a critical error that leads to rebellion and disaster. In “Personal Golem,” instead, Levi describes a dull machine that lacks any form of conscience and ability to revolt, being merely a tool, a true servant. The author’s direct experience with his Macintosh thus changed his attitude towards computers, prompting him to realize their limited, non-threatening capabilities. Such novel awareness is spelled out by Levi in the letter to the publisher Einaudi accompanying the new edition of *Vizio di forma*, published in 1987, two years after “Personal Golem,” where he describes his change in perception since the first composition of the book:

si tratta di racconti legati ad un tempo più triste dell’attuale, per l’Italia, per il mondo, ed anche per me: legati ad una visione apocalittica, rinunciataria, disfattista, la stessa che aveva ispirato il Medioevo

---

<sup>12</sup> “the Golem was a servant who didn’t want to be a servant.”

<sup>13</sup> “He did nothing without Aryeh ordering him to, but he did not do everything Aryeh ordered him to do” (Levi, *Flaw of Form*).



prossimo venturo di Roberto Vacca.<sup>14</sup> Ora, il *Medioevo non è venuto*: nulla è crollato, e ci sono invece timidi segni di un assetto mondiale fondato, se non sul rispetto reciproco, almeno sul reciproco timore.<sup>15</sup> (*Opere* 571)

While here Levi certainly refers to the geopolitical landscape, it is important to bear in mind that many of the stories in *Vizio di forma* deal with technological progress and were first influenced by essays on computers and Artificial Intelligence he read on the popular science magazine *Scientific American*. This is the case, for instance, with Marvin Minsky's article "Artificial Intelligence," which was published in 1966 and inspired Levi's story "A fin di bene," where a telephone network comes to life and, like Hal 9000 in Kubrick's *A Space Odyssey 2001*, hijacks and takes control of the entire system of communication (Mattioda 88–91). The central role of technology—often digital technology—in *Vizio di forma* makes it possible to claim that the hopeful attitude Levi described was also inspired by the confidence he had in the technological advancements—personal computing included—in the second half of the 1980s.

A further important indication of this change in attitude can be found in Levi's reference in "Personal Golem" to another of his short stories: "Il Versificatore," from the collection *Storie naturali*. First written in 1961, it is about a professional

<sup>14</sup> Roberto Vacca in his essay *Il medioevo prossimo venturo* (1971), referenced by Levi, made some apocalyptic predictions on the world's future based on the research elaborated by The Club of Rome, an international think tank of economists and scientists formed in 1968 (see <https://www.clubofrome.org/about-us/history/>), of which Vacca, a computer engineer from IEEE (Institute of Electrical and Electronics Engineers), was a member. The predictions, obtained through a computer simulation, were published in the 1972 report *The Limits to Growth*. The document foresaw a regression to a pre-technological state in consequence to the unhinged technological, economic, and demographic growth following WWII. Vacca's essay touches upon the same topics but adopts a more literary style, combining sci-fi and futurology. A testament to its visionary quality is Isaac Asimov's note opening the English translation of the book: "I have never read a book that was at the same time so convincing and so frightening." Vacca, also a prolific author of novels, many dealing with computers and robots, and popular scientific texts, was Levi's personal friend (Fiaschetti and Vacca).

<sup>15</sup> "these are stories related to a time that was much sadder than the present, for Italy, for the world, and also for me. They are linked to an apocalyptic, pessimistic, and defeatist vision, the same one that inspired Roberto Vacca's *The Coming Dark Age*. But the new Dark Age has not come: things haven't fallen apart, and instead there are tentative signs of a world order based, if not on mutual respect, at least on mutual fear."

poet and his secretary who receive the visit of a salesman, Mr. Simpson, pitching them a machine able to write texts in any metrical pattern, genre and style. “Il Versificatore,” while humorous and lighthearted, is openly critical of the idea of computer-generated poetry, thus signaling Levi’s special concerns (Ross 108–09). These anxieties were seemingly dissipated by his familiarity with his personal computer: as Levi explained, there were still perils in using it to write literature—the risk of prolixity due to the smoothness of the keyboard, the chance of getting distracted by the graphic editor MacPaint, which the author loved,<sup>16</sup> and the disappearance of studying material for philologists. Yet, the technology was not about to dethrone writers. Its limited powers allowed Levi to compare it to a Golem, for it still was mysterious, its inner workings unclear, but tame, friendly—dull. This article also appears to mark the passage from the idea of computing as an intangible network of information—the telephone line coming alive in “A fin di bene”—to an embodied, mundane experience with a physical object over which Levi exerts full control.<sup>17</sup> Even his worst fear—that of inadvertently losing files—proved unfounded: unlike the creature in “Il servo,” his personal Golem followed its master’s orders in the most scrupulous way:

Solo dopo giorni di esperimenti “in corpore vili” (e cioè su falsi testi, non creati ma copiati) ti convinci che la catastrofe del testo perduto è stata prevista dagli gnomi geniali che hanno progettato l’elaboratore: per distruggere un testo occorre una manovra che è stata deliberatamente resa complicata, e durante la quale l’apparecchio stesso ti ammonisce: “Bada, stai per suicidarti!”<sup>18</sup> (*Other People’s Trade* 233).

---

<sup>16</sup> Levi designed with MacPaint the book cover of *Laltrui mestiere*, which represents three owls, the author’s favorite animal (Belpoliti “Ritratto con la maschera da gufo”).

<sup>17</sup> I disagree with Charlotte Ross who detects a lingering fear in Levi’s “Personal Golem” when she writes: “Levi’s personal computer will not take control of or threaten to destroy his life, but an alternative model might” (111).

<sup>18</sup> “Only after days of experimenting with “vile bodies” (that is, pretend texts, not written but merely copied) can you bring yourself to believe that the catastrophe of lost words has been fully taken into account by the clever gnomes who designed the word processor: deleting a text entails a series of steps that has been made intentionally complicated, and along the way the device itself warns you: ‘Look out, you’re about to commit suicide.’”

Interestingly, these traits of domesticity and tameness, are ubiquitous in the early advertisements for personal computers, the intent being that of dissipating customers' fear of a dystopic machine-dominated future. The main effort was indeed to promote the image of a friendly technology, one that was easy to use and highly adaptable to family life, to be sold in electronic stores like any other home appliance. Early advertisements often display images of PCs installed in the kitchen, the homiest of all rooms—that was the case, for example, of Olivetti, Apple, and Honeywell, which, as early as 1969, even came up with the name 'Kitchen computer' (Sims)—, or pictures of parents gathered around the computer screen to help their kids with homework. In line with Levi's comparison between his buzzing Macintosh and a purring cat, a common marketing strategy was to compare computers to a small, friendly animal—hence the choice of Commodore to name its extremely successful product 'PET,' or Olivetti's decision to use images of cats and dogs posing in front of the computer screen. The goal was clearly to confront the two main anxieties holding back potential customers: the worry of an impersonal, robotic experience—the dullness of an uncreative, mechanically repetitive life—, and the lingering fear of a dystopic future dominated by intelligent machines taking over the human race—the almighty mechanical evil gods.

Three of the main tech companies—Apple, Olivetti, and IBM—were particularly effective in tapping into these contrasting fears through their marketing strategies (Caputi "Seeing Elephants"). During the 1983 Super Bowl, Apple aired a television advertisement announcing the new Macintosh, the one Levi bought for himself. Directed by Ridley Scott and recipient of multiple awards, the commercial shows a multitude of brainwashed same-looking men in front of a large screen, from which a Big Brother-like figure dictates orders. Suddenly, a young athletic woman, dressed in bright sport clothes, runs in, throws a hammer against the screen, and destroys it. The scene is followed by the announcement: "On January 24th, Apple Computer will introduce Macintosh. And you'll see why 1984 won't be like 1984."<sup>19</sup> George Orwell's dystopic novel, predicting a technocratic dictatorship, was evoked in order to reassure people that Apple computers were not at all part of the conspiracy, but rather a tool for the resistance. Less emphatically, but still playing along the same lines, was Olivetti M20's printed advertisement, which preceded Apple TV commercial by two months. It showed a little girl cuddling a lamb and the slogan "1984: Orwell was wrong"—"1984: Orwell ha sbagliato," in the Italian version. Again, the goal was to alleviate

---

<sup>19</sup> See Friedman 102–120; Spurgeon; Stein.

customers' fears of a dystopic, inhuman society. The comparison between English and Italian wordings of the Olivetti advertisement is instructive, as it appears to prove Italians needed some extra convincing: while the text directed towards Anglophone customers concentrates on the technical specifications of the Olivetti M20, the Italian version preferred to tell a story of PCs and "personal friends" proving Orwell wrong. If Apple and Olivetti chose to contrast *1984*'s nightmare with images of positive embodiment—the bright energetic athlete and the little girl with the lamb, both female, hence stereotypically closer to Nature—IBM addressed the same issue by evoking a different referent, Charlie Chaplin. Not only did the sweet clumsiness and naiveté of the beloved character successfully pitch IBM PCs as friendly, but, by showing Chaplin comfortably seated in front of his computer, the company reversed the popular image from *Hard Times*, where the character is trapped within the cogs, enslaved and abused by the machine (Caputi "Perspectives"). Just like in Levi's remarks, personal computers proved to be nothing like what they were expected to be: they were far duller than threatening.

### **Umberto Eco's *Il pendolo di Foucault*: Kabbalah for programmers**

While avoided or momentarily stalled, the thread of destruction brought by the new technology was still lingering, either in public perception or in books. This is the case of one of the world bestsellers of the period, Umberto Eco's second novel *Il pendolo di Foucault* (1988). The book is, in perfect Eco style, a postmodern rewriting of the mystery novel revolving around a conspiracy theory: the secret plan to rule the world devised centuries earlier by the Knights Templar. Here, the personal computer owned by one of the three main characters, all working for a vanity press specializing in esoteric texts, is instrumental to the search for the plan. More precisely, rather than revealing the plan, the computer creates it. Indeed, the protagonists begin feeding it fragments from different conspiracy theories as a joke in order to mockingly mimic the credulous esoteric writers submitting manuscripts to their publisher. However, by randomizing the information received, the computer outputs a plan: thus, in a twist leading to their tragic end, the three men start believing their own lies and become convinced that they uncovered a real conspiracy. Even more delusional are the individuals who become interested in their 'secret' and who, upon being told it is all a bluff, kill Belbo, the computer's owner, and start chasing Causabon, the narrator and younger editor, whose ultimate fate remains unknown to the readers.

The novel is dominated by the esoteric idea of a network of meanings hiding underneath the Universe's physical appearance as well as in any written text. Because these connections do not follow a causal chain, for the hidden universal truth to emerge it is necessary to undergo a long process of permutations. Such beliefs, historically crucial to Hermetic and Kabbalistic philosophies, which many of the novel's characters follow, are connected by Eco, ironically, to computing and are intended as a way to automate and speed up the search for enlightenment (Degli Esposti).<sup>20</sup>

That the personal computer in *Il pendolo di Foucault* is suspected to have esoteric powers is indicated by its owner's decision to name the machine 'Abulafia,' after the famous medieval kabbalist. The name is picked after a quarrel that takes place at the beginning of the novel between Belbo and Diotallevi, the other senior editor of the vanity press, who is also a profound connoisseur of the Torah. Diotallevi is disturbed by Belbo's decision to buy a PC and install it in their shared office because he sees the machine as a sacrilegious tool capable of altering and recombining the order of letters in a text. Such powers should be left to God, who, as the Torah reminds us, created the Universe by combining the 22 letters of the Hebrew alphabet. Hence the duty of Jewish mystics to spend their entire life permuting the letters of the sacred book, both as a form of meditation and as a way to progress towards the final revelation. Defiantly, Belbo does not follow this precept: not only does he tell his colleague that his new computer can perform the same duty in a much more efficient way, thus deserving the name Abulafia, but he even has the audacity to write a programme in Basic language that, in a matter of seconds, prints out the 24 combinations of the 4 letters of the name of God: IHVH. Like in any mystery novel revolving around an impending tragedy, this episode functions as a premonition of things to come: to change the text is to change the world, such actions potentially leading towards disaster. "[L]a tua macchina potrebbe darti il delirio, e non l'estasi,"<sup>21</sup> Diotallevi prophetically warns Belbo (34).

---

<sup>20</sup> Eco humorously pairs religion and computers in his 1994 article "Mac vs Dos," in which he compares the different philosophies behind the two operating systems. He explains that Macintosh is Catholic because it guides the user step by step in a clear and pastoral way, believing that anyone has a right to redemption. Ms-Dos is Calvinist because it imposes on the user a long and painful personal interpretation of its rules and lacks the didactic graphical interface.

<sup>21</sup> "your machine may bring you delirium instead of ecstasy" (*Foucault's Pendulum* 34).

Eco encourages his audience to read the novel allegorically because *Il pendolo di Foucault* is a metaliterary analysis masked as a novel and functions as an ironic *mise en abîme* of the author's own writing process. Much like the computer Abulafia, which is tasked by the three protagonists to make up the Knights Templars' plan by mixing literary and philosophical texts, scientific treatises, religious books, pop culture references, proverbs, and more, Eco engages in a constant quotation and rewriting of sources (Hutcheon). The short-circuit between infra and extradiegetic levels reaches its acme when the head of the vanity press advises the three editors to add a chapter about computers and Kabbalah to a book on metals so as to make it more attractive to its readers by inserting this—nonsensical—shocking connection (205). In the purest postmodern fashion, Eco, too, displayed the fascination for long-standing theories around the computational nature of God, while also parodying them. For example, Roberto Vacca, the engineer and novelist Levi mentioned in the second preface of *Vizio di forma*, in 1989 had published the thriller novel *Dio e il computer* about killer Jesuits set to destroy a super computer capable of disproving God's existence. Eco was, of course, too sophisticated to write a thriller novel of that kind. The only thing left for him to do was to ironically quote and re-appropriate the genre following the postmodern strategy he famously illustrated in his "Postille a *Il nome della rosa*:" he could not simply tell his PC "I love you madly," but rather: "As Vacca would put it, I love you madly."<sup>22</sup>

Notwithstanding the ironic filter distancing Eco's personal position from his characters' misadventures with Abulafia, the novel's relentless search for a hidden secret capable of explaining human history as a coherent sequence of events also represents the struggle to prove personal computers' esoteric powers, so as to deny their uncreative, obedient nature. While Levi was relieved to find out that his Macintosh was no more than a servant or a friendly pet, the characters in Eco's novel tirelessly search for divinity beyond dullness: they long to prove the machine to be a formidable Golem and not simply an office appliance that causes their eventual demise.

---

<sup>22</sup> The reference is to Eco's notation on the impossibility to adopt unironically the romantic register, now appropriated by chick lit novelists: "I think of the postmodern attitude as that of a man who loves a very cultivated woman and knows he cannot say to her, 'I love you madly,' because he knows that she knows (and that she knows that he knows) that these words have already been written by Barbara Cartland [Liala in the original Italian]. Still, there is a solution. He can say, 'As Barbara Cartland would put it, I love you madly'" (*Postscript to The Name of the Rose*, 67).

Indeed, when the obsession for the Templars' plan has yet to begin, Belbo considers his computer a practical tool—"Serve a classificare, a ordinare elenchi, ad aggiornare schede"<sup>23</sup> (33). It is precisely because of this lack of creativity that its owner finds it very congenial: as a simple editor, he suffers from an inferiority complex towards writers: "Ecco perché mi piace questa macchina: è stupida, non crede, non mi fa credere, fa quello che le dico, stupido io stupida lei—o lui. È un rapporto onesto"<sup>24</sup> (190). That Belbo initially cultivates a transparent, straightforward relationship with Abulafia is clear from the password he chooses for it: a simple "no," which is the most logic response to the question appearing on the screen: "Hai la parola d'ordine?"<sup>25</sup> (30). It takes Causabon an entire night of speculations to finally guess it. Frustrated, after having tried the most byzantine solutions, he types "no" as a way to talk back to the machine and discovers that admitting his ignorance of the secret was the secret itself. The shift from literal interpretation and overt meaning to an esoteric approach to knowledge is presented in the novel as a way for Eco to problematize the concept of "unlimited semiosis" that he borrows from Peirce and Derrida, (Eco, *The Limits of Interpretation* 23–43) indicating a perpetual "shifting from symbol to symbol" so that "the meaning of a text is always postponed" (27).<sup>26</sup>

As to the meaning of over-interpretation in relation to personal computers and their functioning, it is apposite to considering a number of journalistic pieces Eco penned in the 1990s for his column "La bustina di Minerva" in the magazine *L'Espresso*. Many of these brief op-eds express the author's disappointment towards the counterintuitiveness of personal computers made to look more cryptic, and thus smarter, than they in reality are. In "Come buttare via mezzo Windows" (1994) Eco laments the number of useless programs installed by default in any PC, which take up memory and need to be deleted by following a complex process; in "Appunti sulle icone dei computer" (1996) he points out how confusing computers programs icons are, a tendency he considers a regression

---

<sup>23</sup> "It's for filing, making schedules, updating lists" (*Foucault's Pendulum* 32).

<sup>24</sup> "That's why I like this machine: it's stupid, it doesn't believe, it doesn't make me believe, it just does what I tell it. Stupid me, stupid machine. An honest relationship" (*Foucault's Pendulum* 237).

<sup>25</sup> "Do you have the password?" (*Foucault's Pendulum* 28).

<sup>26</sup> The novel, for Eco, was yet another occasion to reflect on semiotic issues. For an analysis on how the novel functions as a critical essay, see Bouchard; Phiddian.

to pictography; in “La verità, solo la verità” (1996) he criticizes the inability of pop-up tips to effectively answers any question—and this was even before the advent of the infamous Microsoft Office Assistant, Clippit; in “Dell’importanza delle lettere maiuscole” (1996) he deems computer word search unreliable because unable to understand context, and thereby prone to confusing, for example, his last name with the Italian noun *eco*, echo. While such technological shortcomings surely make for witty articles, they also demonstrate Eco’s skepticism towards the abilities of personal computers. To expect the machine to be a creative intelligence was to set oneself up for disappointment or, as in the case of the novel’s characters, disaster.

The same hubris leading the Rabbi of Prague to believe he could claim for himself God’s generative power also convinces Belbo that, by taking advantage of his computer, he could finally create, rather than merely review, other people’s texts (*Il pendolo di Foucault* 416–17). This is indeed one of the main reasons prompting him to buy Abulafia, which he uses, at first, to write a secret literary memoir as a way, he explains, to quench his creative thirst without polluting the book market with yet another mediocre publication. What prompts the character’s tragic fall, which affects his two colleagues, is the decision to abandon literary creation to search for the Plan. Crucially, in order to explain to his colleagues how to computer-generate the Plan, Belbo first provides a literary example, which is the exact description of what Nanni Balestrini did in 1962 when writing one of the first ever computer-generated poems, “Tape Mark I.” Eco, who at the time wrote the critical essay accompanying Balestrini’s poem in the 1962 issue of *Almanacco Letterario Bompiani*,<sup>27</sup> knew very well what that experiment entailed: feeding the computer a certain number of verses taken from pre-existent texts, giving the machine instructions about the desired length of the output poems, initiating the randomization: “Con dieci versi si può ottenere migliaia e migliaia di poesie casuali,”<sup>28</sup> Belbo illustrates (297). Causabon and Diotallevi are immediately capti-

---

<sup>27</sup> Eco’s text “La forma del disordine” closed the 1961 annual issue of *Almanacco Bompiani*, dedicated to the application of computers to “moral sciences and literature,” as specified by the issue’s title. Eco’s contribution addressed the impact of information science and computer programming on the arts and engaged specifically with Balestrini’s “Tape Mark I” and Bruno Munari’s kinetic works, also presented in the magazine’s issue.

<sup>28</sup> “With ten lines you can make thousands and thousands of random poems” (*Foucault’s Pendulum* 374).



vated and convinced to do the same, only to create the Templars' secret plan rather than a poem.

One might be led to believe that Eco was subtly criticizing the idea of computer-generated literature by comparing it to an unhinged conspiracy theory. And yet, while he had his reservations on, for example, hypertextual novels, Eco was focusing here on the peculiar link between the fictional realm of literature and the real world. Only books, as Causabon is told by his partner Lia in an attempt to talk him out of his nonsensical quest for a secret conspiracy, have the privilege to play with meanings without risking awaking any Golem. What the three protagonists have done with Abulafia, instead, is an abomination and has nothing to do with artistic creation: "Il vostro piano non è poetico. È grottesco. Alla gente non viene in mente di tornare a bruciare Troia perché ha letto Omero. Con lui l'incendio di Troia è diventato qualcosa che non è mai stato, non sarà mai eppure sarà per sempre. Ha tanti sensi perché è tutto chiaro, tutto limpido" (425).<sup>29</sup>

While writers are well aware of the fictional nature of their work, which can surely have a tangible influence on readers but not in a performative way, Causabon and his colleagues have lost the ability to distinguish between embodied and virtual reality. It is this confusion, more than the perils of combinatory practices, that constitutes the real threat posed by computerization. The concept of embodiment as a positive reaction against the menace of over-interpretation and, thus, virtualization, is indeed central in *Il pendolo di Foucault*. It is again Lia, a woman and a mother, who strenuously affirms how knowledge needs to be grounded in bodily experience in order to be reliable.<sup>30</sup> Following this conviction, she explains to Causabon why the recurrence of certain numbers and images in every culture and time has nothing to do with esoteric knowledge, but depends on human biology: "non ci sono gli archetipi, c'è il corpo"<sup>31</sup> (287). While her partner

---

<sup>29</sup> "Your plan isn't poetic; it's grotesque. People don't get the idea of going to burn Troy just because they read Homer. With Homer, the burning of Troy became something that it never was and never will be, and yet the Iliad endures, full of meaning, because it's all clear, limpid" (*Foucault's Pendulum* 540–41).

<sup>30</sup> Even the character's name points to her impatience towards sterile speculations: in the Bible, Lia, one of Jacob's two wives, embodies active life, as opposed to Rachel, symbol of contemplative life. The opposition represented by the two women is referenced in Dante's *Purgatorio* XXVII and Eco quotes verses 100–102 from that canto in the preface to chapter 35, in which Causabon recounts his first encounter with Lia.

<sup>31</sup> "archetypes don't exist; the body exists" (*Foucault's Pendulum* 362).

is focused on creating the Plan leading to Belbo's demise and possibly to his own, Lia is pregnant with his child, generating a real life, rather than a Golem.<sup>32</sup>

Diotallevi's death, too, is a testament to the dangers of disembodiment: hospitalized because of cancer, he explains his destiny as the well-deserved punishment for having tampered with the text of the world: "noi abbiamo voluto fare quello che non ci era consentito e che non eravamo preparati a fare. Manipolando le parole del Libro abbiamo voluto costruire il Golem. [...] io sto sperimentando nel mio corpo quello che noi abbiamo fatto per gioco con il Piano"<sup>33</sup> (446–47). Indeed, his cells have subverted the original genetic code by means of permutations and this became possible, Diotallevi explains to Causabon, because he had wrongly taught his cells, by way of example, that tangible reality is merely an epiphenomenon of textual creation.

### **Francesco Leonetti and the Silicon Valley's holy wafer**

The image of DNA as a software that can be hacked with fatal consequences speaks of Eco's concern around issues of disembodiment inherent in the process of digitalization. Metaphors belonging to the semantic field of disease and contagion were indeed taking off in those years, especially within cyberpunk counterculture (Kilgore; O'Neil) and as a consequence of another source of mass panic, the AIDS epidemic (Casilli; Helmreich). Expressions like computer "virus" and "bug" reflected general concerns around the disembodied, and thus elusive, nature of computer code, which was nevertheless capable of causing very tangible changes in the real world.

---

<sup>32</sup> Through the character of Lia, Eco seems to evoke Italo Calvino's novella *La giornata di uno scrutatore* (1963) in which the protagonist's girlfriend, also named Lia, is pregnant with his child. The abrupt news of the unplanned pregnancy upsets the man, who urges his partner to consider having an abortion. In both Calvino and Eco the tension between the female characters and their men symbolizes the opposition between vitality and naturality on one hand, and cold, cerebral speculation on the other. However, while Calvino's character, Amerigo Ormea, is a dramatic figure tormented by his own convictions, Eco's delirious protagonist lacks any real sense clarity. I would like to thank the anonymous reviewer for bringing this parallel to my attention.

<sup>33</sup> "we attempted to do what was not allowed us, what we were not prepared for. Manipulating the word of the Book, we attempted to construct a Golem. [...] I am experiencing in my body everything we did, as a game, in the Plan" (*Foucault's Pendulum* 566).

This tendency of scientific and technological discoveries to seemingly dissolve matter into fluxes of information was explored in the 1985 historical exhibition *Les Immatériaux* at the Centre Pompidou, curated by Jean-François Lyotard and Thierry Chaput (Hui and Broeckmann). The exhibition focused on how all aspects of life—ranging from arts, to biochemistry, architecture, fashion, and even food production—was undergoing a process of sublimation.<sup>34</sup>

The timeliness of this event in capturing a paradigmatic change was recognized nine years later by Francesco Leonetti, who mentioned the Paris exhibition in a long conversation with Paolo Volponi published in *Il leone e la volpe. Dialogo nell'inverno 1994*. Among the many topics discussed by the two writers, the socio-cultural consequences of automation and digitalization recur most often. It is in order to better explain his personal concerns that Leonetti chooses to read one of the chapters from his then-forthcoming novel *Piedi in cerca di cibo*. The book, described to Volponi as “un romanzo (inedito) sugli anni Ottanta, sugli artigiani, sui militanti”<sup>35</sup> is a collection of episodes revolving around a first-person narrator who opens an antique shop in Milan with the money he inherited from an American aunt (Leonetti and Volponi 124). The core of the novel, however, is the many philosophical digressions and staged dialogues between the characters, many of which focus on the process of dematerialization of every aspect of life: the disappearance of artisanal work, the threat to female embodiment posed by food disorders and beauty standards, the transformation of market economy into financial speculation, and, above all, the threat posed by computer technologies (Rustioni 125–130; Signorile).

This last issue is directly addressed in the chapter Leonetti reads to Volponi titled “Visione dell’ostia di San Diego”—or, in the novel, “Visione dell’ostia di Stanford (San Diego).” The chapter describes the narrator’s visit to a Hewlett-Packard Company microchip-manufacturing facility in California. The wafer of the title, in fact, refers to the microprocessor as the Eucharistic body of a new

---

<sup>34</sup> From the exhibition’s press release: “*Les Immatériaux* est une sorte de dramaturgie posée entre l’achèvement d’une période et l’inquiétude d’une époque naissante à l’aube de la postmodernité [...]. Un tourbillon de chemins arrêté où vous tracerez le vôtre : sites de biogénétique et d’arts plastiques, d’architecture et d’astrophysique, de musique et d’alimentation, de physique et d’habillement, un labyrinthe de machines de langages, l’habitat et la photographie, l’industrie et le droit. Des kilomètres de câblage invisible. Et nos questions : la réalité, le matériau, les matériels, les matrices du sens, et qui en est l’auteur ?”

<sup>35</sup> “a novel (unpublished) about the Eighties, about artisans, and activists.”

technological religion<sup>36</sup> whose rituals are celebrated in the many computer factories in Silicon Valley by tech-savvy priests dressed in lab coats: “Trasse da una piccola cassettera [...] un fulgido tondo, un dischetto, grande come una mano di bambino, e ce lo mostrò, tenendolo delicatamente per l’orlo con due diti: come un’ostia. Noi guardammo lui come un prete. Io porsi la lingua, quasi per offrirmi, ma ci voleva una boccaccia enorme...” (126–27).<sup>37</sup>

The image of the consecrated wafer contributes to the depiction of the Silicon Valley computer industry as a cult built around the veneration of technology. In this metaphor, the microchip is the most sacred essence, the divine spirit breathing life into personal computers. Leonetti is concerned with the hegemonic role of the microprocessor, which stands synecdochally for the computer: in a society where the flow of information is at the basis of any decisional or organizational endeavour, the object governing such flow is the only one that matters.<sup>38</sup> Just as in the Eucharist the bread and wine are transformed through transubstantiation, thereby acquiring a spiritual, and yet tangible quality, so the computer code, translated into instructions for the microchip, renders the latter a metaphysical entity. As every aspect of life is becoming virtual, one such cyber-wafer is destined to remain

---

<sup>36</sup> The English technical term, also used in Italian, for the thin round layer of semiconducting material in microprocessors is “wafer.” This might have inspired Leonetti’s religious metaphor.

<sup>37</sup> “From a small chest of drawers, he took out [...] a dazzling round object, a disk, the size of a child’s hand, and he showed it to us while gently holding it by its rim with two fingers: like a wafer. We looked at him as if he were a priest. I pulled out my tongue, as if I was offering myself, but I would have needed an enormous mouth to fit that in....”

<sup>38</sup> Here Leonetti seems to anticipate Michael Hardt’s and Antonio Negri’s discussion on biopolitics and technological surveillance. In *Empire* (2000), Hardt and Negri expand on Michel Foucault’s definition of biopolitical systems, meaning societies regulated by control rather than by discipline, and recognize digital technologies as the perfect tool through which exercise such control. Explaining how Foucault’s notions need to be recontextualized to fit the new technological environment, they explain: “Power is now exercised through machines that directly organize the brains (in communication systems, information networks, etc.) and bodies (in welfare systems, monitored activities, etc.) toward a state of autonomous alienation from the sense of life and the desire for creativity” (Hardt and Negri 27). The same situation is indeed decried in *Piedi in cerca di cibo*, where the new technocratic society inhibits any vital and free form of self-expression. Moreover, Leonetti’s choice to link technology and Catholic symbols, surely invite a comparison between the biopower traditionally exercised by the Church—dictating morals regulating bodily life—, and the new form of authority imposing itself by means of computing technologies.

the only material object left. As one of the attendees to the factory tour points out: “è questo l’oggetto del futuro e unico; ah, ecco, dissolve tutti gli altri” (127).<sup>39</sup>

Not only are the products manufactured in the Hewlett-Packard factory almost impalpable, but the environment as well is white and sterile, for a simple speck of dust could compromise an entire batch of microchips and workers, too, appear to have lost their humanity: “sembrava che tali esseri non fossero più neanche animali con una loro secrezione” (128).<sup>40</sup> In such a decontaminated space, though, the protagonist is able to detect a spark of vitality in one of the employees: just like in *Il pendolo di Foucault*, as well as in the Apple and Olivetti advertisements referenced earlier, it is a woman—and woman of colour, too—who serves the as symbol of a positive embodiment contrasting the advance of the virtual: “Una di esse spostando il viso un attimo, per captare una nuova fila di pezzetti provenienti su un conduttore mobile al suo tavolo, mandò un’onda a noi di sopraccigli e pupille: ed era mulatta, noi la vedemmo” (128).<sup>41</sup> Not unlike the plum trees outside the factory are interpreted by the narrator as a sign of Nature’s strenuous resilience, the young woman’s sexuality represents a challenge to the process of dematerialization. To be sure, Leonetti’s lack of engagement with the discourse on female embodiment and computer culture, initiated by Donna Haraway a few years earlier with her *Cyborg Manifesto* (1985), is disappointing. Yet, this passage is crucial to the interpretation of another subplot in the novel, one that is devoted to the protagonist’s aunt and her personal healthcare robot, Puck, which is also described as being manufactured by Hewlett-Packard. Suffering a malfunction when bringing coffee to bed, the robot ends up strangling the woman—a true Golem copycat.<sup>42</sup> Unlike in Levi’s article, stupidity is not equated with tameness, but rather with the potential for catastrophic, if unintentional, mistakes. Such catastrophes, however, are not unforeseen, as both domestic space and female body are

---

<sup>39</sup> “This is the object of the future and the only one that will survive; ah, yes, it makes all the others disappear.”

<sup>40</sup> “It seemed as if these beings were not even animals anymore, with their own secretions.”

<sup>41</sup> “One of them turned her face for a second, so as to catch a new line of little pieces arriving to her table from a conveyor belt, and she flashed us with a wave of eyebrows and pupils: and we saw she was a mulatto.”

<sup>42</sup> The very name “Puck” evokes a rebellious servant. Indeed, in the English folklore, Puck is a domestic demon who helps with chores, but can capriciously punish its master when displeased.

intended, in the novel, as areas of resistance against the threat of disembodiment posed by technology: surely it cannot be wise to invite the enemy in.

Beyond this caricature of the killer butler robot, *Piedi in cerca di cibo* expresses a deeper anxiety towards the perils of Artificial Intelligence. What makes Leonetti's book especially interesting is the author's awareness of then-current theories. Indeed, the position expressed by his characters are informed opinions, rather than a vague rejection of the idea of "thinking machines." The protagonist's plan to visit the Hewlett-Packard factory in Palo Alto develops during his and his brother Giusto's dinner with an American journalist who claims to have seen how microchips are made and to be positively impressed. Giusto is highly suspicious of the new technology, which he describes as "un supremo artificio vibratorio e circolatorio, che è quasi una scintilla pura o verbo del Dio" (116).<sup>43</sup> To this concept of "parola incorporea futura" (116)<sup>44</sup> symbolized by the microchip, Giusto opposes the theorizations of the Stoic Chrysippus and those of the American philosopher of language John Searle, which the character believes to be directly inspired by the Greek thinker.

While the novel does not make it explicit, the connection between the two is to be found in their common persuasion that any learning process and production of knowledge is, by necessity, an embodied experience. Chrysippus, whose contributions to the field of philosophical logic were essential for the development of Boolean algebra (Shenefelt and White 94–97, 211; Sorge 30–31), on which programming languages are based, theorized, together with Zeno of Citium, the concept of *phantasia kataleptike*, or comprehensible perception (Sedley). With some simplification, Chrysippus argued that a direct, embodied experience of objectual reality is essential to distinguish between false and true impressions (*phantasiai*). The connection Leonetti's character establishes between Stoic epistemology and John Searle is likely to be motivated by the latter's thought experiment called the Chinese Room argument, first illustrated by Searle in his 1980 article "Minds, Brains, and Programs," in which he aimed to disprove the Turing Test and demonstrate how the lack of awareness made Artificial Intelligence an impossibility. Searle imagined a non-Chinese speaker in a room with an instruction book containing all the details on how to mechanically translate Chinese without bothering with meaning. Outside the room there is a Chinese-speaking

---

<sup>43</sup> "a supreme artifice, vibrating and circulatory, almost like a pure sparkle, or the verb of God."

<sup>44</sup> "futuristic incorporeal word."

person who passes questions written in Chinese to the one inside and receives answers. The translator eventually becomes so skilled in following the instructions that he is mistaken for a true Chinese-speaker, while in fact having no clue of the meaning of the messages. To Searle, Artificial Intelligence would be like this translator: able to perform tasks but incapable of intentionality, and thus not an intelligence after all.

Through the connection of Chrysippus to Searle, Leonetti's character makes a strong claim in support of the invaluable and peculiar quality of humans' embodied experience, which will always be essentially different from any acquisition of knowledge through virtual reality, no matter how sophisticated. The suspicion towards the possibility of a disembodied conscience is further expressed in the novel when a friend of the protagonist, who is also a computer scientist—thus his nickname “Informato,” a contraction of “Informatico” (56)—, mentions Douglas Hofstadter and Marvin Minsky in support of his faith in the possibility that the electronic circuits of a computer will display consciousness.<sup>45</sup> The claim causes a strong reaction in the friends gathered around Informato and such theory is criticized as a cybernetic update to the miracle of catholic transubstantiation: “le dispute teoriche di voi programmatori, mentre inserite le balle, le strutture del discorso, nelle macchinette... Ho studiato il tuo ragionamento e ti dico secco: mi pare quello medievale della transustanziazione” (57).<sup>46</sup>

Faith in the conversion of the substance of the host during the Eucharist celebration is equated to Douglas Hofstadter's positions on Artificial Intelligence, who was critical of the Chinese room argument (*The Mind's I* 373–82), and to his underlying belief in the possibility of giving machines a real conscience. The protagonist, and Leonetti with him, is instead firmly convinced, like Searle, of the

---

<sup>45</sup> The concrete possibility that, in the future, a computer might be capable of displaying consciousness and having a creative mind is explored by Douglas Hofstadter in the chapter “Artificial Intelligence: Prospects” of his famous book *Gödel, Escher, Bach: An Eternal Golden Braid* (1979) which won the Pulitzer Prize for non-fiction in 1980 and it is considered a pivotal contribution to field of Artificial Intelligence. To this day, Hofstadter believes in the possibility to build an AI capable of reproducing the complexity of the human mind beyond cognitive and linguistic processes. The same view is held by cognitive scientist Marvin Minsky who, in *The Society of Mind* (1986), applied developmental psychology concepts to the study of human and artificial intelligences.

<sup>46</sup> “you programmers and your theoretical quarrels... while you feed lies and syntax structures into your machines... I have studied your reasoning and I can tell you this: it seems to me like the medieval argument on transubstantiation.”

irreducibility of reality to permutable signs. This clearly emerges from a comment he makes the morning after the encounter with Informato, when, while having breakfast, he observes that his milk tasted fake: “la mattina dopo bevi un cattivo caffelatte, mi sembrava finto, poi mi sembrava l’atto stesso una finzione del bere” (58).<sup>47</sup> This description of a loss of concreteness is reminiscent of a passage from Searle’s Chinese Room article where the philosopher offers a practical example of the essential difference between virtual and embodied reality:

No one would suppose that we could produce milk and sugar by running a computer simulation of the formal sequences in lactation and photosynthesis, but where the mind is concerned many people are willing to believe in such a miracle because of a deep and abiding dualism: the mind they suppose is a matter of formal processes and is independent of quite specific material causes in the way that milk and sugar are not. (424)

The equation between human consciousness and computer reasoning is exactly what Searle was rejecting as potentially leading to the dangerous faith in the possibility of a disembodied mind. More radically, Leonetti’s character fears that this sublimation of matters into a flux of information—a scenario in which the microchip is the only tangible object left—could threaten any aspect of reality. The mechanical body of a computer, like the sacramental bread, is the tangible link to supernal virtual life. For Leonetti, a committed Marxist, this transcendent dimension is a sophistication, a deceitful mirror convincing people that a virtual glass of milk can satiate their “feet in search for food.”

### **Daniele Del Giudice: looking for God’s name on the World Wide Web**

If personal computers provided every desk with a portal into virtual reality and, due to the ensuing daily engagement with the technology, rendered the reflection on disembodied intelligence more pressing and relevant, it was actually with the advent of the World Wide Web that the fabric of reality began to unravel even further. Daniele Del Giudice’s short story “Evil Live” written in 1995–1996 (Spunta 277), at the dawn of the World Wide Web era, and published in 1997 in

---

<sup>47</sup> “The morning after I drank a bad *caffè latte*, it tasted fake and even the very act of drinking seemed like a pantomime of drinking.”



the collection *Mania*, depicts the very beginning of this paradigmatic change in the history of digital communication.

“Evil Live” is the story of a man who, through his online nickname Timetolose, begins an email correspondence with Evillive, possibly—but not certainly—a woman, who sends him nightly episodes of a story describing a female wrestling match between the ruthless and invincible Eva and her contender Ruth.<sup>48</sup> The last episode concludes with Eva killing Ruth and Evillive, a mere spectator and chronicler until then, joining in and performing Eva’s own lethal move against her. Timetolose is thus left wondering if Eva is now really dead, why he has been chosen as the only recipient of this confession, and, more pressingly, if the entire story is real at all. But Evillive never contacts him again and the mystery remains unsolved.

As pointed out by Tiziano Scarpa, Del Giudice’s text references the particular online community, popular at the time, of Fantasy Wrestling (xii–xiii). A type of role-playing game, Fantasy Wrestling predates the World Wide Web, being popular during the Bulletin Board System era, and, even earlier, as a play-by-mail game like correspondence chess. Each participant creates a character and then challenges an opponent to a wrestling match that is neither acted nor visually represented, but simply described in writing (Domino; Merritt). Players thus need to study wrestling manuals to learn all the possible moves and their outcomes so as to defeat their rival in matches that are overseen by a referee. Del Giudice, too, must have consulted some of these manuals and online newsgroups, as the description in his story faithfully reproduces the lingo: “cross-body pin,” “crotch-mauling,” “camel clutch,” “reverse cradle,” and many more are the moves mentioned in Evillive’s expert descriptions. Moreover, within the world of Fantasy Wrestling, there were—and still are—sub communities dedicated solely to women’s matches, like the case of *seekingsfemfight.com*, in which the passion for the sport takes an erotic turn, with titillating descriptions of sweaty, scantily-covered female bodies (Scarpa xiii). This kind of experience is exactly what Del Giudice’s character Timetolose expects from the story Evillive posts on the newsgroup he visits after

---

<sup>48</sup> Like Lia in Eco’s novel, the female characters have biblical names. Eva, the first woman, whose disobedience doomed the entire female progeny, is in Del Giudice a killing machine targeting only female wrestlers and remorselessly destroying them. The biblical Ruth is the epitome of loyalty and female solidarity, because of the deep relationship with her mother-in-law Naomi. Their bond has been interpreted as a covert lesbian relationship (West), which would suit the homoerotic subtext of Del Giudice’s story.

his long days at work. Yet, Evillive clarifies that she has neither time nor patience for such raunchy descriptions—“*Dettagli febbrili? Non ho tempo, non ho tempo per triangolini o laccetti che si insinuano, per rotondità o capezzoli ritti*”—because her interests, like Del Giudice’s, lie elsewhere (108).<sup>49</sup>

In order to understand why the author chooses to reference the online community of Fantasy Wrestling it is essential to consider the biblical reference concluding the last message sent by Evillive: the famous story of Jacob wrestling with the Angel. This episode from the Book of Genesis is mentioned not simply to elevate Eva and Ruth’s match to the level of an epic battle, one having inspired painters and writers for centuries, but in order to comment on how the virtual narrative space, created by the computer network, affects embodied reality.

Central to both stories—the biblical episode and Evillive’s chronicle—are mysterious identities and the search for answers. In Del Giudice’s text, the anonymity protecting the characters is a faithful representation of the conventional nicknames used in online communication, especially common in the early days of the Internet when the Web was perceived as a freeing countercultural space, rather than a “social network” where to meet one’s real life acquaintances (Castells 52–55, 116–33; Gubitosa 17–21). The thrill actually came from the chance to connect with unknown, far away strangers whose charm was precisely their inaccessibility, which in turn sparked obsessive curiosity: this is the case of Timetolose, who spends an entire night trying to find the domain hosting Evillive’s email account, but in vain.<sup>50</sup> This nocturnal quest in search for someone’s identity is reminiscent of the biblical episode in which the wrestling—an allegory for the act of praying—lasts all night and culminates, at daybreak, with the transforming moment of Jacob receiving from God a new name:

Then he said, “Let me go, for the day has broken.” But Jacob said, “I will not let you go unless you bless me.” And he said to him, “What is your name?” And he said, “Jacob.” Then he said, “Your name shall no longer be called Jacob, but Israel, for you have striven with God and with men, and have prevailed.” Then Jacob asked him, “Please tell me your name.” But he said, “Why is it that you ask my name?” And

---

<sup>49</sup> “Feverish details? I don’t have time for that, I don’t have time for little triangles, laces sinking in the flesh, curves, or pointy nipples.”

<sup>50</sup> Evillive’s domain, ironically, is called TheEnd.com, while Timetolose’s is called ToFind.it.

there he blessed him. So Jacob called the name of the place Peniel, saying, “For I have seen God face to face, and yet my life has been delivered.” (“Genesis” 32:22–32)

Del Giudice’s story is structured around the same tension between anonymity and the desire—specifically Timetolose’s desire—to go beyond it. Unlike in the biblical episode, no final revelation occurs. Exegetical commentaries of the biblical episode explain that Jacob’s persistence in asking his rival’s name and the latter’s refusal to answer are due to the fact that, in Judaic culture, to know a person’s name meant to have power over that individual. Crucial to Del Giudice’s story is another unanswered question: in the last email, after having described killing Eva, Evillive concludes: “Con chi lotta Giacobbe, Timetolose? Ti ricordi? Contro chi lotta Giacobbe, in silenzio, nella Notte della Lotta?” (119).<sup>51</sup> The biblical reference comes quite unexpectedly in the context of Fantasy Wrestling. Moreover, it is not clear why somebody who has just confessed to a murder—or is pretending to have done so—would decide to indulge in such trivia. An explanation might be found in Timetolose’s last words to Evillive, in the email concluding the story: “No, non mi ricordo contro chi lotta Giacobbe nella Notte della Lotta, forse con l’Angelo, era un angelo?, ricordo solo che il suo rivale non si dichiara e che continuano a battersi fino all’alba, non ho voglia di andare a controllare... O è questo il punto?... Perbacco Evillive!” (122).<sup>52</sup>

It would be impossible to reduce the sense of this final revelation to one univocal interpretation: it might be argued that Timetolose ends up grasping Evillive’s divine nature, that of the Narrator who can create the Universe with the power of her words, and thus the impossibility—as in Jacob’s episode—to know her name. This reading explains the man’s inability to stop Evillive—“E come potrei fermarti io?, io che sono Timetolose,”<sup>53</sup>—for he is not simply a good-for-nothing—‘time to lose’ as in ‘tempo *da* perdere’—but also, and crucially, doomed to succumb—‘time to lose’ as in ‘tempo *di* perdere’” (121). Thus, anonymity does not simply feature

<sup>51</sup> “With whom does Jacob wrestle, Timetolose? Do you remember? Against whom does Jacob silently wrestle in the Night of the Wrestle?”

<sup>52</sup> “No, I don’t remember against whom Jacob wrestles in the Night of the Wrestle, perhaps with the Angel, was it an angel? I just remember that his rival doesn’t reveal himself and that they keep fighting until dawn, but I don’t feel like checking now... Or maybe this is precisely the point?... My Goodness, Evillive!”

<sup>53</sup> “How could I stop you? Me, who I am Timetolose.”

as an early Internet custom, but is rather charged with deeper, quasi-religious meanings.

Equally, the image of the Divine revealing itself in such a carnal, violent display, as in the wrestling with Jacob, is a way of commenting upon the previously stated tension between virtual and embodied experience in human-computer interactions. Del Giudice's position, while not unconditionally enthusiastic, is not at all adverse to the changes brought by the World Wide Web. The sense of dullness referenced before is still overly present in "Evil Live," as the escapist experience promised by the Internet to Timetolose is nothing but a brief respite from his unexciting life, utterly different from the thrillingly dangerous virtual world in which Eva and Ruth fight for their lives. Moreover, the verb "to navigate," as applied to the Web, does not evoke real adventures in the open sea, but provides, at best, a distraction that is never enough. As Timetolose confesses: "Deludenti sono già le mie fantasie, deludenti Evillive, è il loro destino, le tue così uguali alle mie, e anche a me non bastano" (120).<sup>54</sup> However, with "Evil Live" Del Giudice was not solely warning against the advent of the Internet as a possibly harmful turn responsible for wiping out real human relationships, but also wanted to explore the possibilities offered by the new medium. Indeed, the author was painfully aware of the same process of dematerialization addressed by Leonetti; in his 1992 essay "Gli oggetti, la letteratura, la memoria" he reflected on the programmed obsolescence of modern objects, now unable to last and thus to carry on the memory of past generations. This issue was even more evident when it came to computers, and Del Giudice explained how nostalgia for tangible objects alone justified the existence of the bulky hardware, otherwise quite useless:

Un programma per un computer è sostanzialmente un certo numero di dischetti e un manuale d'istruzione. Costo: tra le cinquecentomila lire e il milione, spesso di più. Come si può rendere meno doloroso

---

<sup>54</sup> "Even my fantasies are disappointing, disappointing I say, Evillive, it's their destiny, yours identical to mine, and they are not enough for me as well." Not only are the two characters' frustrated dreams specular, but their daily mindless routines are too: the paragraph opening the story, which describes Timetolose travelling across the chaotic city to come home from work, is repeated verbatim almost at the end of the text, this time referring to Evillive. Such convergence between the two protagonists' experience, coupled with their anonymity, challenges their identities and the boundaries between reality and literary fiction even further. Readers are then invited to consider the possibility that Timetolose and Evillive are the same person, the latter a fictional double of the first.

l'esborso di un milione per tre dischetti e un manello di pagine? [...] Con una scatola. Una grande scatola del tutto sproporzionata rispetto alla sottigliezza di ciò che contiene, affinché l'acquirente abbia la sensazione di comperare qualcosa e non soltanto un intangibile *software*.<sup>55</sup> ("Gli oggetti, la letteratura, la memoria" 100)

Just like God needed to take on human appearance to be known by Jacob, so the software needs to become an ordinary box for people to be able to approach it. The Internet made the experience even more rarefied, and yet the written text, more precious than bulky hardware, remains as a symbol of resistance against the disappearance of the physical world. Scarpa explains how each story in the collection *Mania* revolves around the protagonists' passion or obsession—*mania*—, which in turn creates an opportunity for them to establish a personal connection with an interlocutor. In "Evil Live" the story itself functions as the point of contact: "l'esso oggettivato, la terza cosa, è il testo stesso, sono le parole che il mittente Evillive fa leggere al destinatario Timetolose, e che vengono trattate come un oggetto" (vii).<sup>56</sup> Such an understanding was rooted in Del Giudice's experience as an Internet user; it persuaded him of a revival of written language in a world dominated by images. The author did not trust visual culture to be capable of producing knowledge and conscience because he deemed it apt to only simulate real experiences (Del Giudice, "Gli oggetti" 97–98). In an interview he gave in 1997, he singled out the nascent practices of online communication, which deeply fascinated him, as a positive alternative to visual communication:

In *Evil live* [*sic*] i due personaggi comunicano attraverso internet, cioè quello che a mio avviso è un fortissimo serbatoio di immaginario

---

<sup>55</sup> "Essentially, a computer program is made of a number of floppy disks plus an instructions manual. Price: between five hundred thousand and one million lire, often more. How to render such expense for three disks and a ream of paper less painful? [...] With a box. A big box, utterly disproportionate when considering how thin its content is, so that the customer feels like buying something, not just an intangible software."

<sup>56</sup> "the objectified 'it,' the third element, is the text itself, the words that the sender Evillive sends for the recipient Timetolose to read, and which are treated like a concrete object." For further discussion of the centrality of the discourse on materiality and the relationship between the physical and linguistic dimension in Del Giudice's production see: Antonello, "La verità degli oggetti"; Bresciani Califano; Zublena.

oltre che luogo di invenzione. E lo fanno usando uno strumento antichissimo: la novella [...]. Internet è proprio come una ipercittà senza confini che ha anche i suoi bassifondi. Per me come scrittore è sempre stato interessante frequentare i bassifondi, e così come un secolo e mezzo fa Dickens poteva frequentare i bassifondi della metropoli che stava nascendo—Londra—oggi può essere per me curioso, interessante, intrigante frequentare i bassifondi della rete. Tra l'altro la rete ha reintrodotta paradossalmente la scrittura.<sup>57</sup> (Del Giudice, "Intervista a Daniele Del Giudice")

While cautious when predicting the future of online literary production, Del Giudice was nevertheless excited about the resurgence of the written language. This positive disposition might also explain the similarities and differences between "Evil Live" and "Prima che tu dica 'Pronto,'" a story by Del Giudice's revered literary mentor, Calvino. As Raffaele Manica observes, both texts present a chaotic network in which the male protagonist loses himself in the attempt to reach a female other: in Calvino's story, the protagonist tries to call one of his many lovers, but the telephone network is hopelessly congested, so that his desperate quest ends in frustration. Crucially, the protagonist admits that, should he finally succeed in establishing a connection, he would not have anything to say: behind his phone calls is not so much a genuine desire to communicate as an obsessive compulsion. In Del Giudice's text instead, the story of Eva and Ruth lasts beyond Evillive's disappearance—a meaningful creation, a resistant literary object that testifies to a brief, and yet real encounter between two people in the fluid virtual dimension of the Web. In many of Del Giudice's texts the interaction between people is made possible by a material object around which the encounter takes place, as in the case of airplanes in *Atlante occidentale*. However, in the virtual space created by

---

<sup>57</sup> "In 'Evil Live' the two characters communicate via the Internet, which I see like as a powerful repository of imagines and a place for creativity. And they communicate using a very old tool: the novella [...]. The Internet truly is like a borderless hyper-city with its gutters. As a writer, I have always been attracted by the gutters, and like a century and half ago Dickens used to roam the slums of his growing metropolis—London—, so is fascinating, interesting, intriguing to visit the gutters of the network. Also, paradoxically, the Web has put writing back into fashion." Del Giudice's positive attitude towards computer culture was immediately recognized by Pietro Citati in his review of *Mania* and in a more recent contribution by Claudia Zudini. Marina Spunta's reading (279–280), instead, considers "Evil Live" to be a critical stance on online communication.

digital technologies, physical objects begin to disappear and turn into a flux of information. Hence, the crucial importance of the written exchange between the two characters that functions as the only possible intermediary in a world that is losing its consistency.

## Conclusion

The narrative outlined by the texts analyzed in this contribution begins with Levi's article of 1985, the year of *Les Immatériaux* exhibition at Centre Pompidou, and terminates with Del Giudice's story in 1997, when another historic event signaling a cultural turn took place: the London exhibition *Sensation: Young British Artists from the Saatchi Collection*. The common trait of these emerging artists' works was an insistent, morbid attention to the corporeal dimension: the main subjects of this exhibition were exposed genitals and orifices, sexual intercourse, mutilation, deformity, sick and old bodies, (Adams et al.). Just one year earlier, in 1996, Einaudi had published the famous anthology of young Italian writers, *Gioventù cannibale* (Brolli), characterized by a very similar obsession for mass media culture and splatter details. It is undeniable that a shift was occurring in the way art addressed the threats faced by information society. While this new vocabulary was a desperate form of exorcism against the process of virtualization, rather than the assertion of a regained positive corporeality, religious metaphors were no longer an appropriate expression of the Zeitgeist. The new crude and visceral imaginary, intended to contrast and denounce the process of sublimation of reality into mass media simulacra, was incompatible with the antinomy offered by religious metaphors, at the same time corporeal and incorporeal. The fertile contradictions between virtual and material aspects of the new computer technology, investigated by the four writers examined by this study, ceased to entice the younger generations of artists and so did the religious imaginary used to convey it.

Indeed, their different approaches towards personal computers notwithstanding, the texts examined in this article are all testaments to their authors' attempts to engage with a new technology in the very first phase of its diffusion, when its full impact and significance were still to be felt. Hence, the conflicting traits and oxymoronic images employed to describe computers as a consequence of the explorative function of these works: Levi's Macintosh compared to a tamed version of the once raging Golem; Eco's Abulafia, apparently capable of awaking evil forces by means of esoteric permutations, but in fact no more than a dull office tool possessed by its owners' obsessions; Leonetti's cyber-wafer transforming

objective reality into profits for tech companies; Del Giudice's protagonist wrestling via email with an Angel whose body is made of written words. The four authors' selections of a specific sacred text or religious reference is, in and by itself, telling of their personal position regarding computing and, even more importantly, of their particular concerns about the impact of computing on literature. Levi's Golem-turned-gentle-giant attests to the author's relief in realizing that personal computers lacked creative skills, a possibility he previously feared. Eco found the combinatory nature of computer logic expressed through the metaphor of the Kabbalah compelling, because confusion between creative acts in literature and in the real world would erase the ironic postmodern distance and dangerously equate fiction with facts. Leonetti, concerned that virtualization could lead to a Baudrillardian multiplication of simulations and simulacra, chose to compare the microchip to the sacramental bread to express the perverted relationship between signs and objects established by computer technologies. From the ineffable miracle of transubstantiation, one then moves to the brutal physicality in Del Giudice's rewriting of the biblical episode of Jacob wrestling with the Angel. In this story, the written and physical worlds are not incompatible, but interconnected through the act of narrating, either performed via the page of a book or an online newsgroup. It is thus clear that religious imaginary has been used by Italian writers to express very different positions regarding the effects of computing on human embodiment and communication. The same desire to engage in a sober, informed manner with technological progress unites these texts and ultimately makes them a privileged vantage point from which the cultural history of personal computers in Italy may be investigated.

*Trinity College Dublin*

## WORKS CITED

- Abbate, Janet. "Getting Small: A Short History of the Personal Computer." *Proceedings of the IEEE*, vol. 87, no. 9, 1999, pp. 1695–98.
- \_\_\_\_\_. *Inventing the Internet*. The MIT Press, 1999.
- Adams, Brooks, et al. *Sensation: Young British Artists of the Saatchi Collection*. Thames and Hudson, 1997.



- Amsallem, Daniela. "Ebraismo, scienza e creazione letteraria: Primo Levi e i miti ebraici di Lilit e del Golem." In *L'ebraismo nella letteratura italiana del Novecento*. Ed. Marisa Carlà and Luca De Angelis. Palumbo, 1995, pp. 123–51.
- Antonello, Pierpaolo. "La materia, la mano, l'esperienza: il centauro Primo Levi." In Antonello, *Il ménage a quattro. Scienza, filosofia, tecnica nella letteratura italiana del Novecento*. LeMonnier, 2005, pp. 79–123.
- \_\_\_\_\_. "La verità degli oggetti: la narrativa di Daniele Del Giudice fra descrizione e testimonianza." *Annali d'Italianistica*, vol. 23, 2005, pp. 211–31.
- Balestrini, Nanni. "Tape Mark I." *Almanacco Letterario Bompiani 1962. Le applicazioni dei calcolatori elettronici alle scienze morali e alla letteratura*. Bompiani, 1961, pp. 145–51.
- \_\_\_\_\_. *Tristano*. Feltrinelli, 1966.
- Baricco, Alessandro. *The Game*. Einaudi, 2018.
- Belpoliti, Marco. "Ritratto con la maschera da gufo." In Belpoliti, *Primo Levi di fronte e di profilo*. E-book. Guanda, 2015.
- \_\_\_\_\_. "Levi e il Golem Mac." *Doppiozero*, 5 June 2019, [doppiozero.com/materiali/levi-e-il-golem-mac](http://doppiozero.com/materiali/levi-e-il-golem-mac). Accessed 12 September 2020.
- Bouchard, Norma. "'Critifictional' Epistemes in Contemporary Literature: The Case of *Foucault's Pendulum*." *Comparative Literature Studies*, vol. 32, no. 4, 1995, pp. 497–513.
- Bresciani Califano, Mimma. "Daniele Del Giudice. *Atlante occidentale*: l'oggetto e la forma nascosta." In Bresciani Califano, *Piccole zone di simmetria. Scrittori del Novecento*. Firenze University Press, 2011, pp. 121–30.
- Brolli, Daniele, editor. *Gioventù cannibale*. Einaudi, 1996.
- Calvino, Italo. "Cibernetica e fantasmi." 1967. In Calvino, *Una pietra sopra. Discorsi di letteratura e società*. Einaudi, 1980, pp. 164–81.
- \_\_\_\_\_. *La giornata di uno scrutatore*. Einaudi, 1963.
- \_\_\_\_\_. "L'antilingua." 1965. In Calvino, *Una pietra sopra. Discorsi di letteratura e società*. Einaudi, 1980, pp. 122–26.
- \_\_\_\_\_. "Prima che tu dica 'Pronto.'" In Calvino, *Romanzi e racconti*, vol. 3. Mondadori, 1994, pp. 268–76.
- Campbell-Kelly, Martin, et al. *Computer: A History of the Information Machine*. 3rd ed., Westview Press, 2013.
- Caputi, Jane. "Perspectives: On Remembering and Forgetting: Charlie Chaplin, IBM, and 1984." *Journal of Popular Film and Television*, vol. 14, no. 2, 1986, pp. 76–79.

- \_\_\_\_\_. "Seeing Elephants: The Myth of Phallotechnology." In Caputi, *Godesses and Monsters: Women, Myth, Power and Popular Culture*. The University of Wisconsin Press, 2004, pp. 209–42.
- Casilli, Antonio A. "A History of Virulence: The Body and Computer Culture in the 1980s." *Body & Society*, vol. 16, no. 4, 2010, pp. 1–31.
- Castells, Manuel. *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford University Press, 2001.
- Ceruzzi, Paul E. "From Scientific Instrument to Everyday Appliance: The Emergence of Personal Computers, 1970–77." *History and Technology*, vol. 13, no. 1, 1996, pp. 1–31.
- \_\_\_\_\_. *A History of Modern Computing*. 2nd ed., The MIT Press, 2003.
- Citati, Pietro. "Del Giudice l'ossessione e il computer." *la Repubblica*, 11 May 1997, <https://ricerca.repubblica.it/repubblica/archivio/repubblica/1997/05/11/del-giudice-ossessione-il-computer.html>. Accessed 8 November 2020.
- Costa, Mario. *Il sublime tecnologico*. Edisud, 1990.
- Cronin, Susie. "Cybernetic Collaborations, Literature Machines and Italo Calvino's *L'incendio della casa abominevole*." *The Italianist*, vol. 37, no. 1, 2017, pp. 69–85.
- Degli Esposti, Christina. "The Poetics of Hermeticism in Umberto Eco's *Il pendolo di Foucault*." *Forum Italicum*, vol. 25, no. 2, 1991, pp. 185–204.
- Del Giudice, Daniele. *Atlante occidentale*. Einaudi, 1985.
- \_\_\_\_\_. "Evil Live." In Del Giudice, *I racconti*. Einaudi, 2016, pp. 103–22.
- \_\_\_\_\_. "Gli oggetti, la letteratura, la memoria." In *L'esperienza delle cose*. Ed. Andrea Borsari. Marietti, 1992, pp. 91–102.
- \_\_\_\_\_. Interview with Roberto Ferrucci. "Intervista a Daniele Del Giudice." *il Reportage*, no. 27, July–September 2016, republished in *Doppiozero*, 1 July 2016, [doppiozero.com/materiali/intervista-daniele-del-giudice](http://doppiozero.com/materiali/intervista-daniele-del-giudice). Accessed 12 September 2020.
- \_\_\_\_\_. *Mania*. Einaudi, 1997.
- Domino, Matt. "My Life as a Fantasy Wrestler: From Glorious Virtual Wins to Crushing Defeats." *The Outline*, 17 January 2017, [theoutline.com/post/898/fantasy-wrestling-e-fedding?zd=1&zi=5tzhcsc3](http://theoutline.com/post/898/fantasy-wrestling-e-fedding?zd=1&zi=5tzhcsc3). Accessed 12 September 2020.
- Eco, Umberto. *Foucault's Pendulum*. Translated by William Weaver, Seaker & Warburg, 1989.
- \_\_\_\_\_. *Il pendolo di Foucault*. Bompiani, 1988.

- \_\_\_\_\_. *La bustina di Minerva*. 1999. E-book. Bompiani, 2011.
- \_\_\_\_\_. “La forma del disordine.” *Almanacco Letterario Bompiani 1962. Le applicazioni dei calcolatori elettronici alle scienze morali e alla letteratura*. Bompiani, 1961, pp. 175–76, 186–87.
- \_\_\_\_\_. “Non preoccupatevi per l’ipertesto.” 1993. In Eco, *La bustina di Minerva*. 1999. E-book. Bompiani, 2011.
- \_\_\_\_\_. “Postille a *Il nome della rosa*.” *Alfabeta*, no. 49, June 1983, pp. 19–22.
- \_\_\_\_\_. *Postscript to The Name of the Rose*. Translated by William Weaver, Harcourt Brace Jovanovich, 1984.
- \_\_\_\_\_. *The Limits of Interpretation*. Indiana University Press, 1990.
- Faggin, Federico. “How We Made the Microprocessor.” *Nature Electronics*, vol. 1, no. 88, 8 January 2018, [nature.com/articles/s41928-017-0014-8/briefing/signup/?origin=Nature&originReferralPoint=EmailBanner](https://www.nature.com/articles/s41928-017-0014-8/briefing/signup/?origin=Nature&originReferralPoint=EmailBanner). Accessed 12 September 2020.
- Friedman, Ted. *Electric Dreams: Computers in American Culture*. New York University Press, 2005.
- Gallippi, Angelo. *Federico Faggin. Il padre del microprocessore*. Tecniche Nuove Editore, 2011.
- “Genesis.” *The Holy Bible*. English Standard Version. 2001. Crossway Bibles, 2016.
- Gillies, James, and Robert Cailliau. *How the Web Was Born: The Story of the World Wide Web*. Oxford University Press, 2000.
- Gray, Matthew. “Web Growth Summary.” *Internet Statistics*, 20 June 1996, [stuff.mit.edu/people/mkgray/net/web-growth-summary.html](http://stuff.mit.edu/people/mkgray/net/web-growth-summary.html). Accessed 12 September 2020.
- Gubitosa, Carlo. *Italian crackdown: BBS amatoriali, volontari telematici, censure e sequestri nell’Italia degli anni ‘90*. Apogeo Editore, 1999.
- Hafner, Katie, and Matthew Lyon. *Where Wizards Stay Up Late: The Origins of The Internet*. Simon and Schuster, 1996.
- Haraway, Donna. “Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s.” *Socialist Review*, no. 80, 1985, pp. 65–108.
- Hardt, Michael, and Antonio Negri. *Empire*. Harvard University Press, 2000.
- Helmreich, Stefan. “Flexible Infections: Computer Viruses, Human Bodies, Nation-States, Evolutionary Capitalism.” *Science, Technology, & Human Values*, vol. 25, no. 4, October 2000, pp. 472–91.
- Hofstadter, Douglas R. *Gödel, Escher, Bach: An Eternal Golden Braid*. Basic Books, 1979.

- Hofstadter, Douglas R., and Daniel C. Dennett, editors. *The Mind's I: Fantasies and Reflections on Self and Soul*. 1981. Basics Books, 2000.
- Hui, Yuk, and Andreas Broeckmann, editors. *30 Years after Les Immatériaux: Art, Science, and Theory*. meson press, 2015.
- Hutcheon, Linda. "Eco's Echoes: Ironizing the (Post) Modern." *Diacritics*, vol. 22, no. 1, Spring 1992, pp. 2–16.
- Kilgore, Christopher. "Bad Networks: From Virus to Cancer in Post-Cyberpunk Narrative." *Journal of Modern Literature*, vol. 40, no. 2, Winter 2017, pp. 165–83.
- Lachman, Gary. "Homunculi, Golems, and Artificial Life." *Quest*, vol. 94, no. 1, January–February 2006, pp. 7–10.
- Lem, Stanisław. *Golem XIV*. Wydawnictwo Literackie, 1981.
- \_\_\_\_\_. *Imaginary Magnitude*. Translated by Marc E. Heine. Harcourt Brace Jovanovich, 1985.
- Leonetti, Francesco. *Piedi in cerca di cibo*. Manni Editore, 1995.
- Leonetti, Francesco, and Paolo Volponi. *Il leone e la volpe. Dialogo nell'inverno 1994*. Einaudi, 1995.
- Les Immatériaux. Communiqué de presse*. December 1984, Centre George Pompidou, Paris. [centrepompidou.fr/cpv/ressource.action?param.id=FR\\_R-7850d8a35e55c06b8ae6cccdc2ce6ac4&param.idSource=FR\\_E-ec23b17dc48b72fc9a696a1db2beb4c](http://centrepompidou.fr/cpv/ressource.action?param.id=FR_R-7850d8a35e55c06b8ae6cccdc2ce6ac4&param.idSource=FR_E-ec23b17dc48b72fc9a696a1db2beb4c). Accessed 12 September 2020.
- Levi, Primo. "Il Versificatore." *Storie naturali*. Einaudi, 1966, pp. 29–56.
- \_\_\_\_\_. "Personal Golem." *La Stampa*, 15 November 1984. Republished under the title "Lo scriba" in *L'altrui mestiere*. Einaudi, 1985, pp. 230–33.
- \_\_\_\_\_. "La poesia può andare d'accordo con il computer? Una domanda a Primo Levi." *Genius*, n. 4, January 1985, pp. 11–12.
- \_\_\_\_\_. *L'altrui mestiere*. Einaudi, 1985.
- \_\_\_\_\_. "Lettera 1987." *Vizio di forma*. In Levi, *Opere*. Ed. Marco Belpoliti, vol. 1. Einaudi, 1997, p. 571.
- \_\_\_\_\_. "Letter 1987." *Flaw of Form*. Translated by Jenny McPhee. *The Complete Work of Primo Levi*. Ed. Ann Goldstein. E-book, vol. 1. Liveright Publishing Corporation, 2015.
- \_\_\_\_\_. *Other People's Trade*. Translated by Anthony Shugaar. *The Complete Work of Primo Levi*. Ed. Ann Goldstein. E-book, vol. 3. Liveright Publishing Corporation, 2015.

- \_\_\_\_\_. “The Versifier.” *Natural Histories*. Translated by Jenny McPhee. *The Complete Work of Primo Levi*. Ed. Ann Goldstein. E-book, vol. 1. Liveright Publishing Corporation, 2015.
- Lima, Eleonora. *Le tecnologie dell'informazione nella scrittura di Italo Calvino e Paolo Volponi: Tre storie di rimediazione*. Firenze University Press, 2020.
- Lollini, Massimo. “Golem.” *Primo Levi*. Ed. Marco Belpoliti. Marcos y Marcos, 1997, pp. 348–60.
- Longo, Giuseppe O. *Il nuovo Golem. Come il computer cambia la nostra cultura*. Laterza, 1994.
- Lupo, Giuseppe. *La letteratura al tempo di Adriano Olivetti*. Edizioni di Comunità, 2016.
- Maldonado, Tomàs. *Reale e virtuale*. Feltrinelli, 1994.
- Manica, Raffaele. “Del Giudice, un punto inatteso della realtà in scala.” *Alias del manifesto*, 24 April 2016, <https://ilmanifesto.it/del-giudice-un-punto-inatteso-della-realta-in-scala/>. Accessed 8 November 2020.
- Markowitz, Judith, editor. *Robots that Talk and Listen: Technology and Social Impact*. Walter de Gruyter, 2015.
- Mattioda, Enrico. *Levi*. Salerno Editrice, 2011.
- Meadows, Donella H., et al. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. Universe Books, 1972.
- Merritt, Chad. “Where Did FW Come From?” *What is... Fantasy Wrestling*, [fwrestling.com/whatis/EpEVupFpppUVXRNRtX.shtml](http://fwrestling.com/whatis/EpEVupFpppUVXRNRtX.shtml). Accessed 12 September 2020.
- Minsky, Marvin. “Artificial Intelligence.” *Scientific American*, vol. 215, no. 3, September 1966, pp. 246–63.
- \_\_\_\_\_. *The Society of the Mind*. Simon and Schuster, 1986.
- Montale, Eugenio. “Nel Duemila.” *Diario postumo*. Ed. Annalisa Cima. Mondadori, 1996, p. 21.
- O’Neil, Mathieu. “Rebels for the System? Virus Writers, General Intellect, Cyberpunk and Criminal Capitalism.” *Continuum*, vol. 20, no. 2, June 2006, pp. 225–41.
- Parolini, Giuditta. *Mario Tchou: Ricerca e sviluppo per l'elettronica Olivetti*. Egea, 2015.
- Phiddian, Robert. “Foucault’s Pendulum and the Text of Theory.” *Contemporary Literature*, vol. 38, no. 3, Autumn 1997, pp. 534–57.
- Pianzola, Federico. *Le “trappole morali” di Primo Levi: miti e fiction*. Ledizioni, 2017.

- Rapoport, Sonya. "Digitizing the Golem: From Earth to Outer Space." *Leonardo*, vol. 39, no. 2, 2006, pp. 117–24, 132.
- Reid, Thomas R. *The Chip: How two Americans Invented the Microchip and Launched a Revolution*. Random House, 2001.
- Renello, Gian Paolo. *Machinae. Studi sulla poetica di Nanni Balestrini*. Clueb, 2010.
- Ross, Charlotte. *Primo Levi's Narratives of Embodiment: Containing the Human*. Routledge, 2011.
- Ruffilli, Bruno. "Il 30 aprile 1986 l'Italia si collegava a Internet per la prima volta: ecco com'è andata." *La Stampa*, 29 April 2016, <https://www.lastampa.it/cultura/2016/04/29/news/il-30-aprile-1986-l-italia-si-collegava-a-internet-per-la-prima-volta-ecco-com-e-andata-1.35020651>. Accessed 8 November 2020.
- Rustioni, Marco. *Il "caso Leonetti." Utopia e arte della deformazione*. Pacini Editore, 2010.
- Scarpa, Tiziano. "La profezia delle parole." In Del Giudice, *I racconti*. Einaudi, 2016, pp. v–xvii.
- Searle, John R. "Minds, Brains, and Programs." *Behavioral and Brain Sciences*, vol. 3, no. 3, 1980, pp. 417–57.
- Sedley, David N. "Zeno's Definition of *Phantasia Kataleptike*." In *The Philosophy of Zeno: Zeno of Citium and his Legacy*. Ed. Theodore Scaltsas and Andrew S. Mason. Municipality of Larnaca, 2002, pp. 133–54.
- Sgherza, Alessio. "Pietro Zancarini e il primo sito web italiano: 'Testi e link, quanta novità in quella pagina.'" *Repubblica.it*, 29 April 2016, [repubblica.it/tecnologia/2016/04/29/news/pietro\\_zancarini\\_e\\_il\\_primo\\_sito\\_web\\_italiano\\_testi\\_e\\_link\\_quanta\\_novita\\_in\\_quella\\_pagina\\_-138691701/](http://repubblica.it/tecnologia/2016/04/29/news/pietro_zancarini_e_il_primo_sito_web_italiano_testi_e_link_quanta_novita_in_quella_pagina_-138691701/). Accessed 12 September 2020.
- Shenefelt, Michael, and Heidi White. *If A, Then B: How the World Discovered Logic*. Columbia University Press, 2013.
- Signorile, Nicola. "L'ostia di Leonetti." *Belfagor*, vol. 52, no. 311, 30 September 1997, pp. 604–08.
- Sims, David. "How Apple and IBM Marketed the First Personal Computers." *The Atlantic*, 17 June 2015, [theatlantic.com/entertainment/archive/2015/06/clear-the-kitchen-table-how-apple-and-ibm-marketed-the-first-personal-computers/396047/](http://theatlantic.com/entertainment/archive/2015/06/clear-the-kitchen-table-how-apple-and-ibm-marketed-the-first-personal-computers/396047/). Accessed 12 September 2020.
- Sorge, Leo. *I chip di Nostradamus*. Apogeo, 2006.

- Spurgeon, Christina L. "From Mass Communication to Mass Conversation: Why 1984 Wasn't Like 1984." *Australian Journal of Communication*, vol. 36, n. 2, 2009, pp. 143–58.
- Spunta, Marina. *Voicing the Word: Writing Orality in Contemporary Italian Fiction*. Peter Lang, 2004.
- Stein, Sarah R. "The '1984' Macintosh Ad: Cinematic Icons and Constitutive Rhetoric in the Launch of a New Machine." *Quarterly Journal of Speech*, vol. 88, no. 2, 2002, pp. 169–92.
- Vacca, Roberto. *The Coming Dark Age*. Translated by John S. Whale. Anchor Books, 1974.
- \_\_\_\_\_. *Dio e il computer*. Bompiani, 1984.
- \_\_\_\_\_. *Il medioevo prossimo venturo. La degradazione dei grandi sistemi*. Mondadori, 1971.
- \_\_\_\_\_. Interview with Maria Egizia Fiaschetti. "Roberto Vacca: 'Morirò a 95 anni. Il futuro? Stiamo attenti ai robot.'" *Corriere.it*, 5 October 2018, [corriere.it/liberitutti/18\\_ottobre\\_05/roberto-vacca-moriro-95-anni-futuro-stiamo-attenti-robot-bf352ce2-c5a6-11e8-994e-6382a2ca0409.shtml](https://corriere.it/liberitutti/18_ottobre_05/roberto-vacca-moriro-95-anni-futuro-stiamo-attenti-robot-bf352ce2-c5a6-11e8-994e-6382a2ca0409.shtml) Accessed 12 September 2020.
- West, Mona. "Ruth." In *The Queer Bible Commentary*. Ed. Robert E. Goss, Deryn Guest, Mona West, and Thomas Bohache. SCM Press, 2015, pp. 190–94.
- Wiener, Norbert. *God & Golem, Inc.: A Comment on Certain Points Where Cybernetics Impinges on Religion*. MIT Press, 1964.
- Zane, Marcello. *Storia e memoria del personal computer. Il caso italiano*. Jaca Books, 2008.
- Zublena, Paolo. "La scienza del sentimento. Il linguaggio tecnico scientifico di Daniele Del Giudice." *L'inquietante simmetria della lingua*. Edizioni dell'Orso, 2003, pp. 119–42.
- Zudini, Claudia. "Scrittura e internet nel racconto *Evil Live* (1997) di Daniele Del Giudice." *Cahiers d'études italiennes*, 15 June 2010, pp. 137–46.