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THE *ART BRUT* WORK OF JEAN PERDRIZET BETWEEN SCIENTIFIC INVENTION AND UTOPIA¹

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Fig. 1. Jean Perdrizet on his bicycle from a film of the Bernard Autrand-Perdrizet Collection.

The life and work of Jean Perdrizet (Fig. 1) are inseparable, both mysterious and fascinating, but they also carry a tragicomic undertone, as can be seen in the correspondence with French CNRS researchers José Argémi and Jacques Paillard, between Argémi and surrealist painter Adrien Dax, and in the judgments of those who knew Perdrizet in his home town of

¹ This text is the translated and expanded author's version of the conference by J.G. Barbara, « L'œuvre de Jean Perdrizet, entre invention scientifique et utopie », galerie Christian Berst, February 29 2012, Paris, France.

Digne-les-Bains. His spiritism, his machines for communicating with ghosts, his "sidereal Esperanto" and his "ceiling-piercing machine" were all understandably amusing. But his neighbors, the children and journalists who visited him, the researchers with whom he corresponded including representatives of NASA and of the US Air Force (Fig. 2, 3) who replied to his letters of plans, were all intrigued by the complexity of his scientific approach, bewitched by the ardor with which he created and publicized his work. They were all willing to maintain some form of contact with him by renewing their interest and compliments. Perdrizet saw all these exchanges as proof of the value of his scientific activity, which he felt justified the award of a Nobel Prize. At least twice, in fact, he solicited his committee, sending drawings and letters of recommendation, the most glowing of which was from his neighbor!

The paradoxical character of this work, which we don't know a priori whether it belongs to science, art or a free form of metaphysical thought, is inherent in the personality of its author. This character can also be seen in the various dimensions of the reception of Perdrizet's work – perplexity, interest, smiles and admiration – by all those to whom he sent his plans, which in all represented a volume of two tons of paper over forty years. When I requested and received Jacques Paillard's personal papers at my office in order to give them to the *Archives Nationales*, without any prior knowledge of Perdrizet, my reaction to the sight of his countless annotated drawings was no different, and I immediately recognized the complex, aesthetic, disturbing, crazy, yet pertinent characters of this work questioning in a metaphysical futurist spirit the new possibilities of communication offered by the science of the 1950s between man and machine. This rational project was in fact underpinned by another, barely veiled, but which gave Perdrizet all his strength of work and imagination. It was the naïve dream and hope, which we've all cherished for a moment of forgetfulness or ecstasy, of communicating with the "beyond" of time and space, the extraterrestrial world and the world of the past and the dead. For Perdrizet, cybernetics opened up a new metaphysical era, making it possible to send robots into space to communicate with spirits circling in the universe close to Earth whether human or extra-terrestrial.

If this work fascinates, this is because it grapples with the fundamental anguish of death, the loss of loved ones and the lack of communication between individuals, through a personal creative rationality whose interest lies in the fact that it is characteristic of its time. But Perdrizet's work is not only a reflection of his time, since at the age of twenty-six, in 1935, he was already beginning his career as a self-proclaimed "inventor" before the scientific and artistic movements of cybernetics and modern science fiction, later taking some interest in his dream. His work, taken in its entirety, can be classified a posteriori as belonging to both the cybernetics and *art brut* movements, but it actually falls somewhere between the two, neither really in one nor the other, developing a profound and disconcerting metaphorical thinking with the allure of a metaphysical myth, perhaps a little like – in its functioning – the *machine célibataire* of dada.

Translated author's version of the conference by J.G. Barbara, « L'œuvre de Jean Perdrizet, entre invention scientifique et utopie », Round table, galerie Christian Berst, February 29 2012, Paris, France.

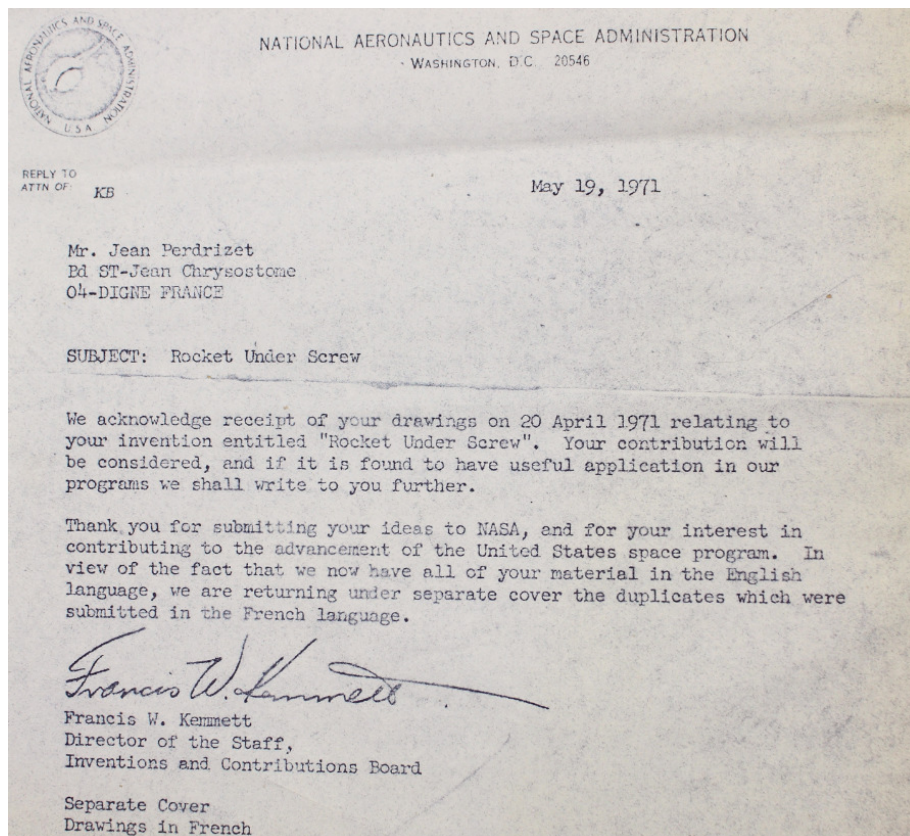
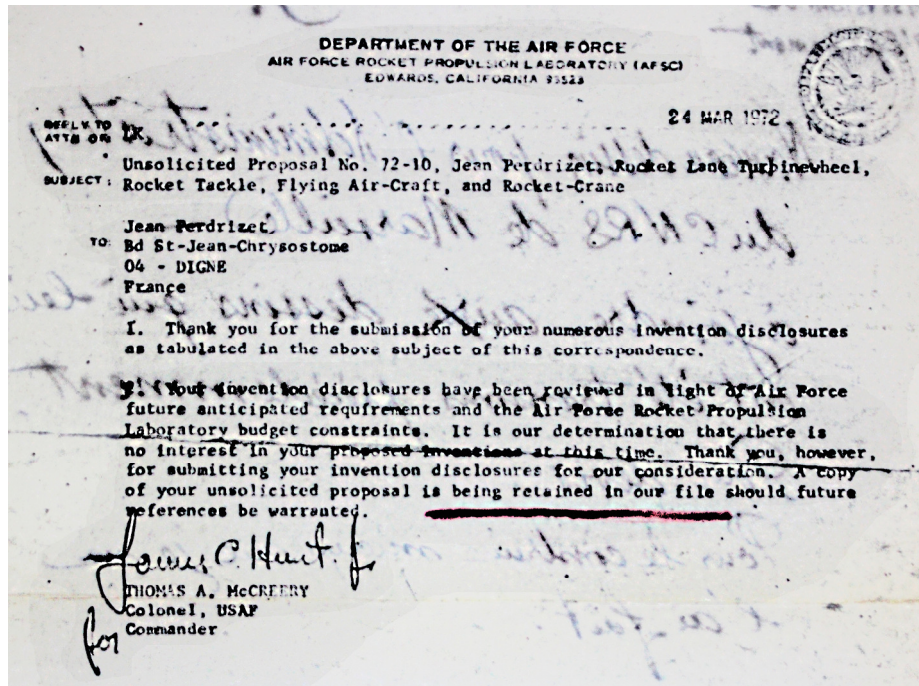


Fig. 2. Response of the US Air Force and NASA to letters of Perdrizet (1972), galerie Christian Berst, Paris

Jean Perdrizet was first and foremost a scientist; sending out his works was not intended as publicity, but as an effective search for scientific interlocutors, even if this correspondence and the visits he received did not allow for any real communication, as Argémi wrote to Dax. Perdrizet remained isolated in his myths and his *bricolage*. The interest he aroused, even among scientists, was more aesthetic and metaphysical. Yet his art was science, and Perdrizet saw himself neither as an artist nor as a scientific researcher, but as an "inventor"; this was inscribed on the stamp used for his correspondence, which his colleagues at the *Ponts-et-Chaussées* made for him. His scientific training – a mathematics baccalaureate and training as a technical assistant at the *Ponts et Chaussées* (1930) – enabled him to work as a works supervisor, then as a draughtsman at the *Génie Militaire* in Grenoble. However, a period of unavailability for health reasons from 1939 to 1944 enabled him to fully satisfy his scientific curiosity and his creative urge to build machines. His annotations on plans testify to the diversity of his reading, from scientific newspapers and magazines to books of history of science and technology, as well as works of physics.

Perdrizet's invention is an *art* in the sense of the *artes mechanicæ*, and his plans for flying saucers (Fig. 3) and reading and writing machines, eclectically combining pulleys, pendulums, Marey drums, transistors, electromagnets, tracing pens and compressed-air tubes, bear witness to a creative imagination comparable to that of Leonardo da Vinci, four and a half centuries later. The same distance from reality proportionally erases the practical and technical interest of these machines, and the imagination at work is not a delusion, but the imaginable limit of what science can hope to achieve with its own means, even if for the flying machines (Fig. 3) of these two inventors the energy source required a few more centuries of research.

Perdrizet's productions also belong to an "art", in Panofsky's sense, that seeks out the real and represents it through the construction of objects that imitate natural phenomena, just as Vinci's arts of painting, anatomy and mechanics were united in the same philosophical dimension. As with Vinci again, Perdrizet's work is not always directly concerned with science, because it does not aim at real functioning, but rather a simple partial representation of the imaginable. While the calculating machine or the ceiling-piercing machine did work, and Perdrizet was able to demonstrate them, the flying saucer he presented to a mathematics teacher was a device without a power source. "This is as if, said the professor, you were trying to lift yourself up by pulling yourself up by your hair with one hand." Perdrizet, a mind both tormented and naive in certain respects, but clever as Paillard pointed out, thought for three days. He finally replied through his neighbor, a colleague of the mathematics teacher in his high school, that if he had invented a flying saucer, the mathematics teacher simply had to find a new source of energy himself! The flying object had been imagined at a time when everyone knew someone who had seen a UFO at least once, like Perdrizet's own neighbor (and one of my schoolteachers at the same time around 1974, as I learned from the press). This machine was a real

"invention" in the etymological sense, a representation of something simply imagined and held to be true, neither real nor dreamt outside of all knowledge. It wasn't just an aesthetic sketch of its fuselage, but the creation of the cogs and transmission mechanisms to get it off the ground. The fundamental paradox of Perdrizet's production is that, unlike the engineer, the plan was not conceived as the outline of an invented machine. The cardboard and tin-can cut-out model was in fact a primordial artefact, necessary for the drawing of an amalgam of plans, sections and interspersed texts that represented the real invention of his art.

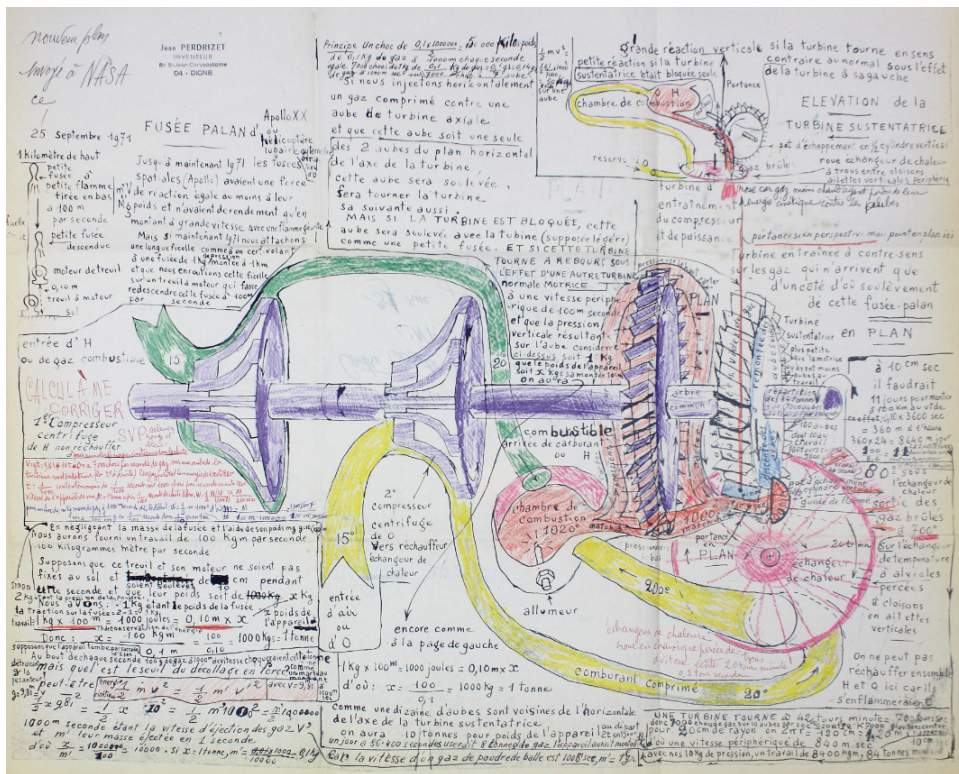


Fig. 3. Drawing sent by Perdrizet to NASA : « Fusée palan d' Apollo XX ou hélicoptère lunaire ou terrestre air au lieu d'O [sic] », 55,4 x 71 cm, 1971, galerie Christian Berst.

Inventive but not really an engineer, Perdrizet was nevertheless handy with the drawing board and certain mechanical and thermodynamic calculations. In the 1940s, he tried his hand at designing calculating machines, including his "logarithmic tower" (Fig. 4), a sort of slide rule, at a time when Louis Couffignal, the famous French calculating machine builder, was just beginning his career after his thesis on *L'analyse mécanique, application aux machines à calculer et à la mécanique céleste* (1938). But all of Perdrizet's other electro-mechanical devices refer to meanings other than pure engineering, even if cybernetics is the field of study to which Perdrizet himself refers most extensively to characterize his "cybernetic experiments",

such as the construction of robots and flying machines. The deepest source of his inspiration seems to be, above all, *communication*, in the humanist dimension of the so-called "ideology of communication" of cybernetics founder Norbert Wiener, created to counteract fascist and totalitarian ideologies after the Second World War. But for Perdrizet, it wasn't a question of communication between subjects, but of communication with beings from the beyond, the only one perhaps really possible and conceivable for him, or rather necessary. For his relationships with those closest to him were either fusional, as with his mother, or conflictual, as with his sister, or distant with his colleagues, or almost non-existent with his visitors, and stereotyped with his neighbor, where he had a quick coffee at the same time every day. Over time, Perdrizet became so obsessed with communication that he created a new universal language, the t-language, based on the ideogram value of the letters of the alphabet. The origins of this obsession are clear to us, and there is no need to be a psychoanalyst to see the connection between the death before his eyes of his father, whom he tried to resuscitate for a night, and his spiritualist experiences, which enabled him to regain serenity by re-establishing communication with the man whose disappearance, or rather extinction of voice, he never accepted. The collective séances with a light table described by his neighbor prompted him to build an electric *oui-ja*, a spiritist table equipped with a device for writing down messages from the beyond, and another similar device, a typing machine for writing with the beyond. This latter machine associated with each letter a pendulum that was believed to greatly amplify (*démultiplier*) the waves of "matter-energy", so that the stochastic movements of these pendulums inscribed according to Perdrizet messages as successions of letters. For Perdrizet, the machine functioned as a dream catcher, what he called a "trap for messages from the beyond". He envisioned the dead belong to the cosmos, where ghosts, spirits and souls lived together with extraterrestrial species. His futurism was tinged with animism, and his trap is reminiscent of Native American dream catchers using modern electro-mechanical technology.

This naïve metaphysics combined with his game of constructing robots in the spirit of cybernetics. And this is where the interest of Perdrizet's work lies. For his fragile psychology in the affective sphere gives him the energy, imagination and, above all, the faith that any scientist or artist would envy when creating, whether cybernetic models of human psychological faculties or surrealist works of art. The delirious dimension of Perdrizet's production may therefore seem an epiphenomenon on the bangs of his creative dimension, in some ways ahead of his time.

Indeed, Perdrizet shaped an original representation of the robot from the early 1950s, which surely interested Jacques Paillard from a scientific point of view, and Argémi and Dax from a surrealist point of view. At the time, Paillard was a young researcher who was fascinated to attend the major CNRS international colloquium on *Les machines à calculer et la pensée humaine* (Calculating machines and human thought), organized by

Couffignal at the rue d'Ulm (Paris) in 1951. When he received Perdrizet's drawings more than ten years later, Paillard surely recalled the freedom of those early cyberneticians of the human mind in the 1950s, and surely placed Perdrizet among the wildly imaginative avant-gardists of that early period including Warren S. McCulloch or William Grey Walter.

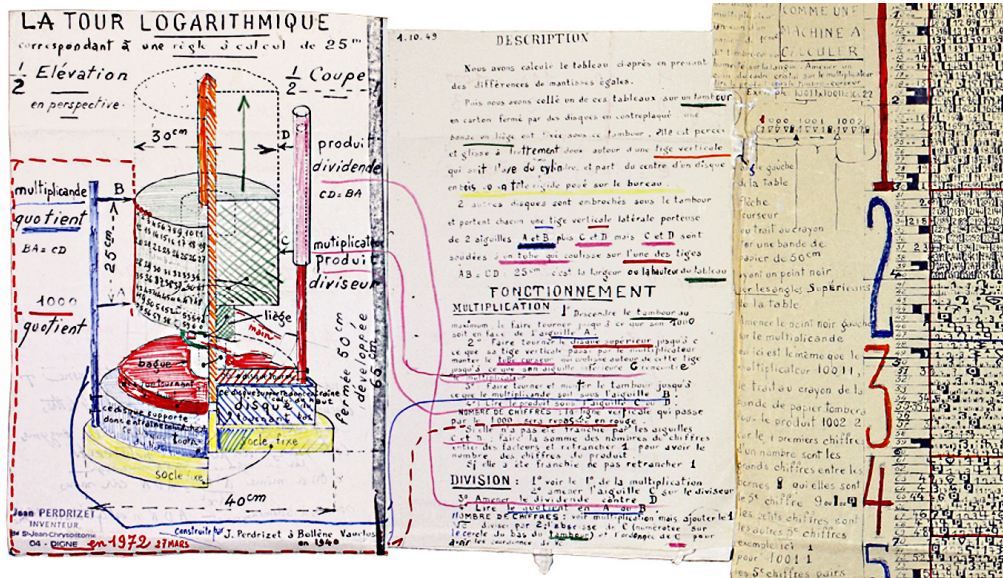


Fig. 4. « La tour logarithmique », 49 x 102,5 cm, Collection abcd

But Perdrizet's conception of the robot was not as simplistic as that of certain American and British cyberneticians at the 1951 colloquium, in particular Warren McCulloch and William Grey Walter. The French had more reservations about simplistic animal-machine analogies, such as those suggested by W. Grey Walter's electronic turtles, or his later machine which reproduced Pavlovian conditioning behaviors. For Perdrizet, a robot was not simply a programmed computer endowed with movements, perceptions and behaviors. And so he envisaged his response to the CNRS colloquium debate early on and in isolation through his creative *bricolage*, inventing robots closer to the human mind than the first ones envisaged by neurocybernetics.

A 1971 drawing by Perdrizet describes a house-building robot and a bridge presented at the International Symposium on Artificial Intelligence in London in the same year. This robot assembled simple elements such as cubes and pyramids, according to a plan which was analyzed by a digital camera and a computer. The computer calculated positions and then manipulated these elements to build the house using an articulated arm fitted with a gripper. But according to Perdrizet this was a "non-robot". Indeed, in the same page, Perdrizet adopts a polemical and critical tone on the rapprochement between intelligent machines and man. In his view, "ambiguity" is too often forgotten in artificial intelligence. Perdrizet's ideal robot was not a computer programmed for a specific task, but an artificial individual receptive to environmental signals, capable of imagination and

generating a language. For Perdrizet, the ideal robot has an *ame* "soul", with the circumflex accent removed from the French word *âme* to distinguish it from the human soul. In the same spirit, Perdrizet imagined tracing tables, robot eyes capable of recognizing shapes and equipped with visual exploration systems. In short, Perdrizet's robot was a true communicating subject, a cybernetic individual endowed with imagination.

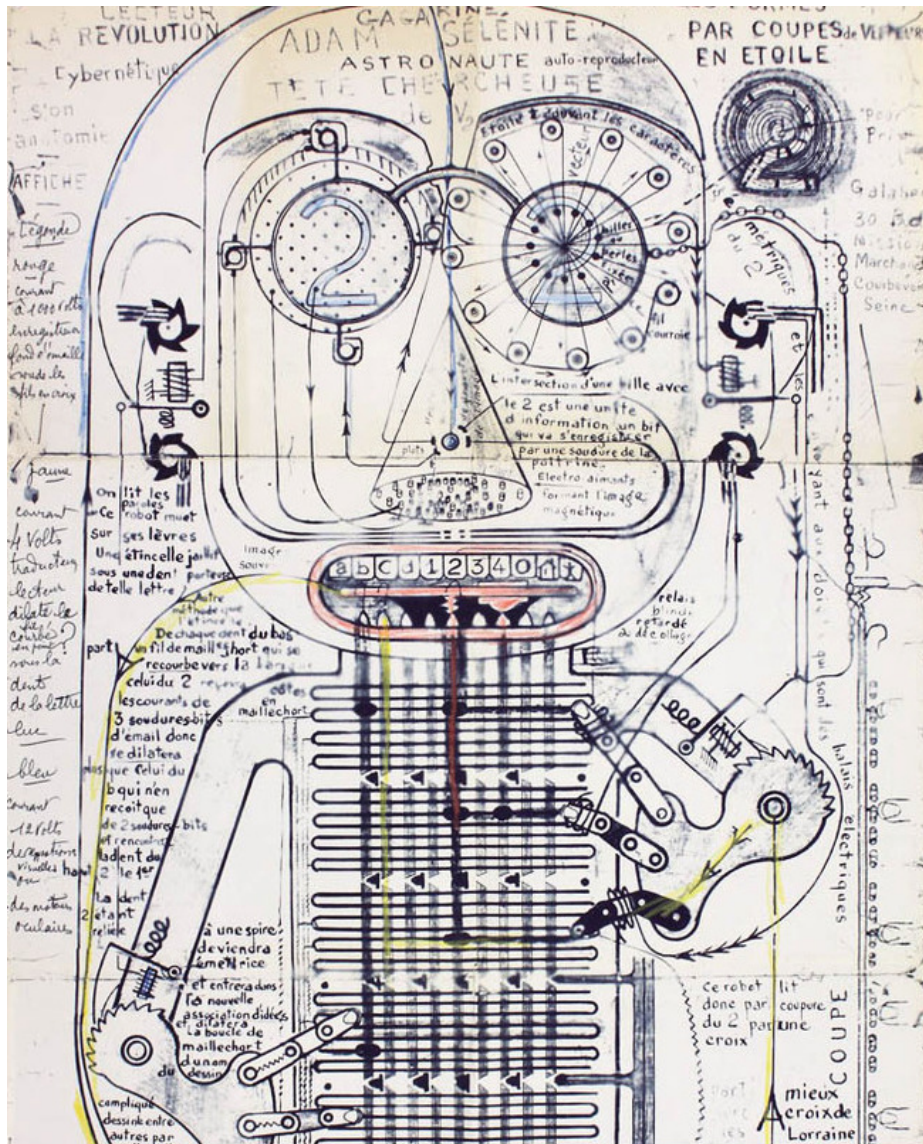


Fig. 5. Jean Perdrizet's intelligent robot of the 1950s. (Archives nationales, galerie Christian Berst)

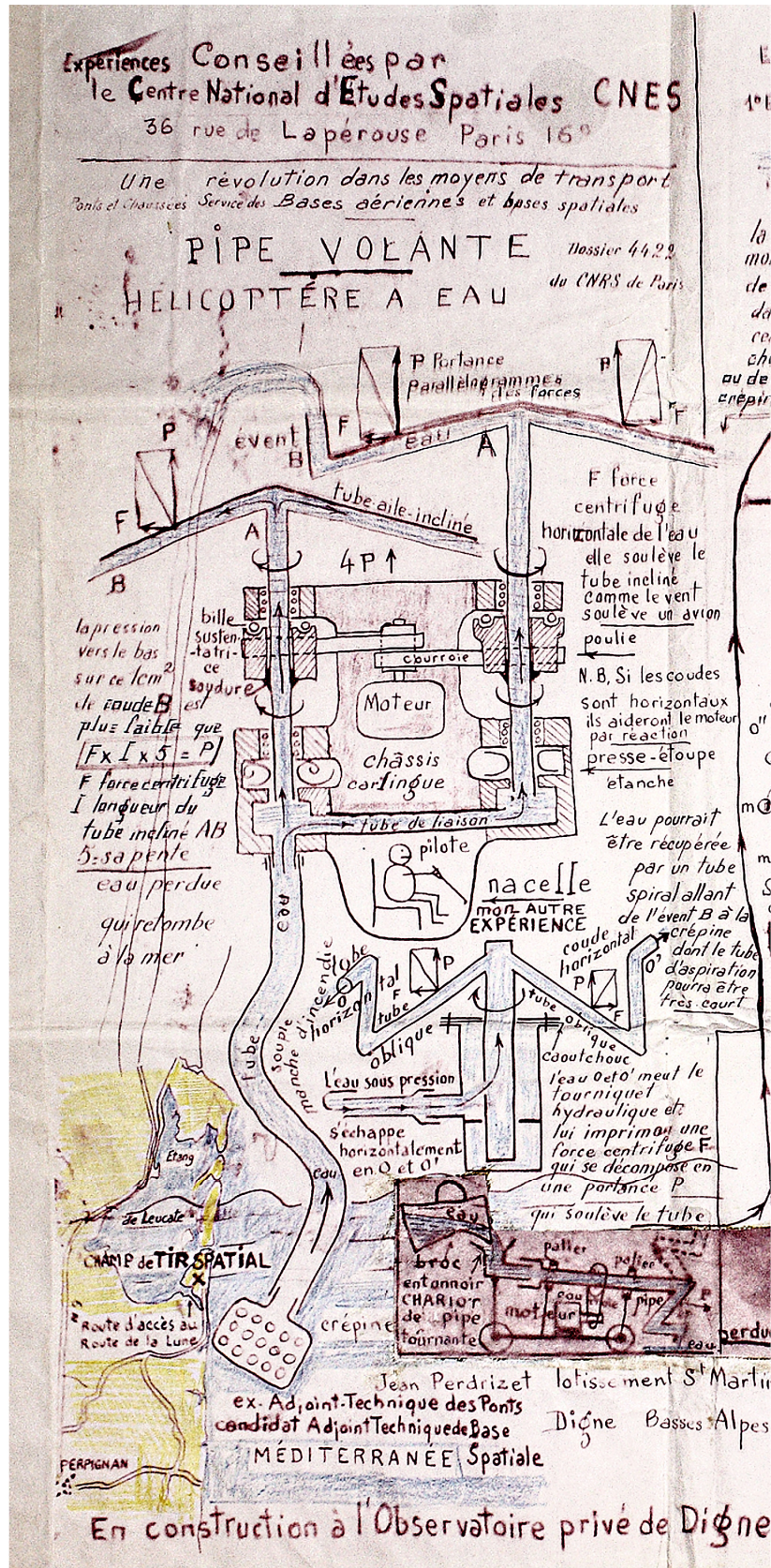
But what would Perdrizet see as the essential benefit of creating a robot? His metaphysical system makes this machine the ideal interlocutor with extraterrestrials and the dead, since the robot is a subject sensitive to the the slightest vibrations, which it is capable of greatly amplify and transcribe into human language. From then on, the robot becomes a "cosmonaut robot" with a soul, equipped with a form of energy with its "electrodifferential robot

selsyn motors". He becomes a "self-replicating" and "Selenite Adam", with a "water brain" and capable of "imagination".

The world created by Perdrizet is gradually becoming a veritable cybernetic utopia of communication with the dead. All that is missing then is a spacecraft that will enable these robots to reach the space where they are the only actors that can trap the cosmic signals of the dead. Perdrizet envisages various flying space machines, such as a "centrifugal helicopter", a "flying pipe", a "water helicopter", a "palan rocket", a "flying saucer" or a "rotating retrorocket". The navigating robot becomes the celestial angel that unifies the realms of the living and the dead. Conversely, Perdrizet seemed to believe in the strange profession of a radio electrician that "the dead seek to build machines to communicate with us". Cybernetics was undoubtedly the ideal solution, according to Perdrizet, for establishing this two-way communication and avoiding the painful separation of deceased loved ones.

This cybernetic mythology actually underlies a work that presents itself and to its scientific interlocutors as a veritable work of *engineering*. This is why Perdrizet, having reached the end of his mythological construction in the 1970s, once again becomes the engineer of his own world. Since his metaphysics had enabled him to regain a certain form of serenity by communicating with his father, and a certain public consideration, he tried out his flying saucers, injecting them with compressed air from the *Ponts et Chaussées* garage or, more modestly, pressurized tap water. He gave public demonstrations with children in his neighbourhood, which led to some press articles. The always slightly playful tone of the journalists cast doubt on the real relevance of these constructions. But all liked them. Perdrizet believed in himself. The plan of his flying saucer was displayed for some time in the physics laboratory of the high school of Digne-les-Bains, and this invention enabled him to write to NASA, CNES (*Centre national d'études spatiales*, Paris, France) and several times to the Nobel Committee. His utopia seemed perfect. Perdrizet had created a world that would interest a psychopathologist, a surrealist or an *art brut* specialist, but that is not at first what we were interested in. After his mother died, and Perdrizet went off to that "elsewhere" of which he seemed so certain, he didn't survive this new separation and died three days later. His work had cured him of one death, but the second killed him.

Fig. 6. (Next page) Drawing (excerpt) « Pipe Volante – Hélicoptère à eau – Machine de Dean », galerie Christian Berst. Perdrizet writes the drawing represents experimentations recommended by the CNES and the spatial and air base of *Ponts-et-Chaussées* with a spaceship under construction at Perdrizet's private astronomical observatory for launching tests near Leucate swamp (France) (*expériences conseillées par le Centre d'Études Spatiales CNES [...] Ponts-et-Chaussées Service des Bases aériennes et bases spatiales [...] en construction à l'observatoire privé de Dignes [...] en vue d'essais au « Champ de Tir Spatial » » de l'étang de Leucate*).



Jacques Paillard was interested in this utopia, but he was not fooled by Perdrizet's genius. He considered him both unserious by his scientific standards, but very clever. Perdrizet had a certain genius for making contacts, arranging financing for a trip, obtaining compressed air or having his plans reproduced as scale models. Perdrizet had succeeded in establishing the standards of an art conceived as a cybernetically inspired metaphysical pseudo-science. But his thinking was in line with some of Paillard's most original ideas on human biomechanics and the cognitive approaches of neurophysiology.

If Perdrizet wasn't aware of what really made him original, he had a certain flair for sensing what needed to be combined to cobble together, in Lévi-Strauss's sense, the new myth of an autonomous robot. It was in this spirit that Perdrizet quoted the cognitivist linguist Noam Chomsky or the French science journalist Pierre de Latil. Far from being a cybernetic madman, he was aware that he was sometimes perceived as such, and locked himself into a strategy of incessant justification, always looking for new interlocutors. For Paillard, Perdrizet's robots had the merit of proposing an aesthetic and material model of what he sought to highlight in his own research: the idea that movement, perception and language are based on pre-established representations that are induced by the recognition of signals. Cognitive body schemas precede action. Perdrizet's man-machine analogical schema was indeed more subtle than that of many scientists, due to the pervasiveness of an embodied metaphysics in his work.

Perdrizet's art fitted into the *Zeitgeist* of cybernetics and the cognitive science from the 1940s to the mid-1970s. But what really was his "art"? Today, Perdrizet's productions are roneo reproductions of his drawings, which he hand-colored for each recipient in highly personalized mailings. There is no doubt that these plans are his real work. His graphics, aphorisms and drawings are original and pleasing art. This is where his talent for using the drawing board comes into its own, and where he unfolds his thoughts in bits and pieces. The complex mix of drawings and texts is subtle, so that each work can be deciphered by studying a particular context, with specific references to the work of others.

The scale model with which Perdrizet began his work was not a prototype, but a simple material representation of his machine made from bicycle chains and wheels, sheets of Canson paper, cut-out blocks and Marey drums. His machines were never finished, and were constantly evolving. Only the plans and drawings became finished works, reproduced and distributed. Perdrizet's *bricolage* was first and foremost a form of concrete material thinking with limited means – those entrusted to him by his neighbor in a wooden box – to respond as best he could to fundamental metaphysical problems, according to a form of thinking that is not naïve or primitive, but essential to the human mind, a way of being in the world that Lévi-Strauss perceived and far more general than he had no doubt suspected.

Now, these imaginative springs, even if they are not sufficient for the "scientific mind" as unraveled by Bachelard, are an essential constitutive element of it, as historical epistemology is now rediscovering, with a better appreciation of the importance of metaphors, analogies, physical models and many other tools of thought openly denigrated by the cold rationalism of logical positivism.

The recycled material Perdrizet used, cycle chains, wheels, cardboard pieces were given to him by his neighbor in a small old wooden chest that he returned just before his death. When the chest was opened many years later, it was a real public event and everyone could imagine a different machine it may contain. But in the chest as mysterious as if it possessed some form of magical power, there was no trace of any beautiful, successful machine, but only a few scattered, worthless old utensils, disjointed elements that no one could suspect had ever been used to build any single machine.

Perdrizet's Meccano was first and foremost a tool of thought, a bricolage, and his work was always limited to this thought as reflected in his boards. This vision of the world could not leave anyone indifferent at a time when science was seen above all as a language, and its practices as obscure and sometimes dangerous bricolages. Perdrizet's apparent madness reflected an obscured image of science, blurring his own epistemology and that of the philosophy of science of the 1960s and 1970s. Perhaps Perdrizet's work was in line with Paillard's own scientism, in defending the idea that science was first and foremost a material activity, the seizure of concepts by concrete objectivizations, a Bachelardian *phénoménotechnique* not merely at the service of conceptual elaboration, but constitutive of the complex thinking at work in the creation of new scientific objects which Perdrizet only planned in his complex drawings.

But Perdrizet's bricolage seemed to be far removed from science, and it may recall another equally whimsical, but more self-aware, and more precious, art. Indeed, it may come to be natural to compare Perdrizet's "machines" with Marcel Duchamp's *machines célibataires*. José Argémi himself used this term to characterize them. But then we need to broaden the concept of *machines célibataires*, and we have to leave the scientific and epistemological interpretation of Perdrizet's work for a moment if we wish to understand imagination in reference to art. Indeed in Perdrizet's work, mechanisms don't operate on the basis of a *machines célibataires* where there is a clear separation between the feminine and the masculine in order to reinvent the workings of a desire that cannot be expressed according to the conventions of society. Duchamp's society machines transcend the moral judgment of the bachelor by mechanically creating other forms of male-female relationships that allow him to assume his masculine dominance in a state of mind that is now considered quite deplorable and fought against in this day. More generally, then, *machines célibataires* must be seen as having been conceived from real elements to produce myths and new representations. Perdrizet's machines seem alike since they elaborate a myth

and they stage the dead as vibrations and waves interacting with recording devices, sensitive electro-mechanical transcribers, robots, capable of communicating messages from the beyond to the living.

But Perdrizet was certainly not looking for originality, or for a particular form of expression or aesthetic; his machines were primarily designed to recreate the myth of communicability with the dead, which he so urgently needed, through cybernetics and the invention of new autonomous robots. Perdrizet's machines are a utopia of immortality that, since the epic of Gilgamesh, has sought to abolish the temporal and spatial limits of human existence. According to Perdrizet, death is not so much the disappearance of the dead man's body as his inability to communicate with the living. The dead, who drift off into the cosmos, regain immortality through the communication they can establish with humans via robots. Perdrizet's machines forge this fundamental myth in their own way.

The correspondence between José Argémi and Adrien Dax provides a new opportunity to reflect on today's interest in Perdrizet's work. For the historian of science, Perdrizet's work allows us to consider the influence of the intellectual context of cybernetics and cognitivism at the interface between science and metaphysics. Perdrizet's annotations in the margins of his drawings mirror the scientific and metaphysical aspirations of research into artificial intelligence, linguistics and robotics. We also discover how scientific discoveries and the opening up of new fields directly inspired Perdrizet's creative thinking. For a man of science like Jacques Paillard, we saw how Perdrizet's work could be seen as a distant echo of ideas to be defended in the 1970s on the autonomous character of cognition. But the interest in Perdrizet's work that provoked the most wonder and reflection was that of Argémi and Dax. While Argémi, like Paillard, was a research scientist at the CNRS in Marseille, and Dax an engineer from Toulouse, both were also artists, particularly Dax, who was known as a surrealist illustrator. Argémi and Dax perceived Perdrizet's work from a point of view outside art, due to the distance they themselves maintained between their art and official Surrealist art. They perceived this work with an eye that was nonetheless "surrealist", i.e. essentially sensitive to a form of creation outside any artistic canon, overflowing with an entirely free imagination and alien to any aesthetic research. A few exchanges about a possible edition of Perdrizet's drawings testify to their concern not to consider his art either as the art of a madman or as *art brut*. "I don't want to fall, writes Argémi, into the style of *art brut* [in reference to a text intended to comment on a Perdrizet plate]." Argémi is undoubtedly referring to the strict concept of *art brut* of Jean Dubuffet, with whom Dax was in close contact, and who nevertheless wondered whether he might have been interested in Perdrizet. In fact we have shown in our book on Perdrizet that Dubuffet already knew Perdrizet's work!

Argémi and Dax's excitement for Perdrizet can only be understood by the surrealist emulation between the two men. Both produced illustrations using automatic processes, Argémi's cut-and-pasted ink stains depicting ghosts, and Dax's abandoned technique of making prints from food scraps. They were also fascinated by certain machines, such as the one Argémi found at a flea market, which he called a "mental lateralization machine". The two men closely followed the publication of the first and only issue of the surrealist magazine *Élémental*, to which Dax seemed to collaborate. What fascinated these minds was essentially the fact that a man such as Perdrizet could elaborate in his own corner, outside any artistic cultural conditioning and without aesthetic concern, through an unbridled imagination, a work that intrinsically possessed an undeniable aesthetic value and whose metaphysical dimension represented its main quality.

This laudable excitement has the merit of having helped to preserve and bring to light this work, which nevertheless suffers from being apprehended in this egocentric, restrictive and naïve manner, despite all the points in common between Perdrizet and Surrealism, the most notable of which are perhaps spiritualism and self-centeredness. Argémi and Dax seemed to me fascinated above all by Perdrizet's total faith in his art, and theirs seems almost derisory in comparison. The ghost cut-outs in ink dilutions and spot prints represented experiments in automating an art that could only doubt itself, as it seems to us, or so we sense from the letters exchanged by the two men. It remains difficult to take seriously the surrealist art of the scientists who tried their hand at it, with their results, their intentions and their faith.

Is Perdrizet's art *art brut*? Are his annotations *écrits bruts*? The main difficulty to answer such questions lies not in the role of the producer's cultural isolation in this categorization, but in the more precise characterization of his intention. In the majority of cases, even for outsider arts producers, the motivation is to produce a drawing or a sculpture, the aesthetic dimension of which is apparently fully assumed and sought-after. However, the history of art and certain productions of outsider art include works in which this dimension is perhaps not as important as the metaphysical content. The relationship between art and beauty can be highly complex.

Another main motivation may be to elicit emotional support for a work that presents itself in isolation to the viewer, as a pure production detached only from the author's imagination. According to these criteria, Perdrizet's work is atypical. What is sought is a clear, precise drawing that presents an object (a machine) through a complex network of scientific references. Perdrizet's art, whether drawings or texts, is a far cry from that of other *art brut* producers, for the masked intention is to inscribe a metaphysical discourse in science through the interplay of graphic and literary production.

The apparent intention is that of an engineer. The drawings and texts are not presented as graphic and literary works that challenge the viewer for their own sake. What is put forward is apparently a machine, but in reality a metaphysical utopia. This work can therefore be considered *art brut*, but to reduce Jean Perdrizet to an *art brut* producers, or to a representative of *art des fous* or *art naïf*, would be a mistake well perceived by José Argémi, so much so that Perdrizet, a metaphysical craftsman rather than an artist, deploys an ideal world through his imagination, a utopia, far more complex, rare and strangely rooted in science, than all those from other producers of *art des fous*, *art naïf*, outsider art, system art or cybernetic art, whose metaphysics, intention and aesthetics often remain somewhat obscure or perhaps poor.

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The author

Jean-Gaël Barbara is a historian of science at CNRS, Paris, France, specialized in the history of the neurosciences. In 2006, he discovered the largest collection of drawings by Perdrizet in the personal papers of French neuroscientist Jacques Paillard (1920-2006). In 2012, he began to study them from several perspectives, *art brut*, history of science (engineering, neuroscience, cognitive science, mathematics, computer science), imagination in science and psychiatry.

List of inventoried drawings by Jean Perdrizet

ARCHIVES NATIONALES DÉPARTEMENT DES ARCHIVES
PRIVÉES (PIERREFITTE-SUR-SEINE, Cotes : 670AP/9, dossier 2
[1946]-2006)

- « La pensée électrique » (1936 et 1962)
- « Vision cybernétique des formes » 35,5 × 64 cm (1949)
- « Langue des robots astronautes sidérale – Espéranto sidéral – Prospectus
– Espéranto logistique instantané » (1949)
- « Exploration visuelle mixte » 37,7 × 65 cm (1954)
- « Espéranto cybernétique – Espéranto dessiné » (fin années 1950)
- « Robots qui imaginent des dessins géométriques » 53 × 69,5 cm (1962)
- « Machine à lire » 49 × 129 cm (1960)
- « Celestial language for robots on moon – sideral esperanto – logical
esperanto » 41 × 64 cm (1960)
- « Dactylographied hieroglyphs » 47,5 × 90 cm (1961)
- « Dans l'usine cerveau » 41 × 124 cm (1961)

- « Vision des formes : photo-lecteur pour machine à traduire » 38 × 63 cm (1961)
- « Robot dessinateur à embrayage direct » deux exemplaires 53 × 65 cm (1962)
- « Centre national de la recherche scientifique Marseille : éclairage extérieur » 63 × 19,69 in (1962)
- « Robot dessinateur, changements de vitesses » 45 × 70 cm (1962)
- « Affiche de l'Universidad central de Venezuela » 59 × 39 cm (1963)
- « Machine à lire pour ordinateur », 27 × 65 cm et 52 × 63 cm (1968)
- « Soucoupe volante pour robot cosmonaute » 38 × 150 cm (1969)
- « OCR Reconnaissance optique de caractères » 53 × 75 cm (1971)
- « Invention pédagogique pour la montagne des 31 dividendes » 66,5 × 50,5 cm (1971)
- « Machine à lire et à voir » 54 × 63,5 cm (1971)
- « Rocket under screw » 54 × 85 cm (1971)
- « Table traçante d'ordinateur imaginatif » 74 × 74,5 cm (1973)
- « Parapsychologie ou spiritisme scientifique » 39 × 86 cm (non daté)
- « Enclenchements SNCF » 43 × 65 cm (non daté)
- « Un robot qui voit les formes » 654,5 × 41 cm (non daté)
- « Robot lecteur aquarium cybernétique » 45,5 × 75,5 cm (non daté)
- « Problèmes posés par l'aiguillage de l'influx » 27,5 × 41,5 cm (non daté)
- « Qu'est-ce que la visualisation » 30 × 43 cm (non daté)
- « Exploration topologique par ondes de relais rotatifs de l'image télévisée » 33,5 × 63 cm (non daté) Liste des œuvres de Jean Perdrizet 327
- « Montage d'appareils de mesure. Rétine homéostatique de robot » 35,5 × 64 cm (non daté)
- « Proposition aux Bourbakistes » 36,5 × 64 cm (non daté)
- « Esperanto logistique instantané » 44 × 225 cm (non daté)
- « Parapsychologie cybernétique – résonateur lecteur – cerveau électrolyte – robots astronautes auto-reproducteurs » (1942-1957)
- « Cerveau électrolyte » (années 1950)
- Livret « Robot cosmonaute pour J. Paillard » (années 1970)
- Livret pour J. Paillard « La perception visuelle du robot cosmonaute » (années 1970)
- Livret Langue T (années 1970)

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- « Cerveau électrolyte – astronaute », héliogravure 50 × 65 cm (1957)
- « Une machine à lire pour ordinateur » 56,5 × 76 cm (1968)
- « Electric Oui-ja » 62,5 × 75 cm (1968)
- « Espéranto dessiné » 53 × 199 cm (1967)

MUSÉE D'ART MODERNE, D'ART CONTEMPORAIN ET D'ART BRUT LILLE MÉTROPOLE (LAM)

- « Machine à lire à résistance liquide » 50 × 65,1 cm (1970)
- « Machine à écrire avec l'au-delà » 52 × 66 cm (1971)
- « Montagne des 31 dividendes » 30,4 × 23,9 cm (1971)
- Lettre « Courbe clothoïde » 30,4 × 23,9 cm (1971)
- « Lunette lisante – Machine à lire par spectres » 52,2 × 69,6 cm (1972)
- Lettre adressée à M. José Argémi du CNRS de Marseille 51,5 × 66 cm (1972)
- « Tambour traçant – Périphérique d'ordinateur » 54,1 × 66 cm (1972)
- « Soucoupe-volante centrifuge – mieux wagon volant » 51,5 × 66 cm (1972)
- « Imagination du robot » 49,8 × 65 cm (1973)
- « Réfusées rotatives – Treuil » 49,5 × 65 cm (1973)
- Cahier « Langue t ou pictographie dactylographiée » 19,5 × 25,5 cm (1973-1974)
- Lettre « Je refais cette expérience pour cet appareil, mais cette fois sans air comprimé, mais avec de l'eau qui coule d'un robinet » 49,5 × 65 cm (1974)
- « Turbine à air comprimé » 67 × 39,5 cm (1974)
- Lettre « Pour mon 2^e envoi à Stockholm – Nobel » 13,5 × 12 cm (avant 1975)
- Coupure de presse annotée « Veuillez m'envoyer votre proposition pour le prix Nobel... » 13,5 × 12 cm (1975)328
- Coupure de presse annotée « L'inventeur dignois Perdrizet parviendra-t-il à faire décoller son hélicoptère à "moteur humain" ? » 20,7 × 25 cm (1975)
- « Hélicoptère à moteur humain » 95 × 75 cm (1968)
- « Machine à lire et à voir » 49,5 × 40,6 cm (1971)
- Lettre « Machine à lire et à voir » 49,5 × 40,6 cm (1971)
- « Pour piloter l'âme – avion ponctiforme aiguille – penser c'est broder le fil de nos idées » 38,6 × 128 cm (1968)

MUSÉE GASSENDI DE DIGNE-LES-BAINS

- « Radio-ame » 33 cm × 106 cm (1942)
- « Bioélectronique – Bionique – Parapsychologie cybernétique et Résonateur lecteur du robot astronaute » 39,3 × 65,5 cm (1942, 1957)
- « Un robot ouvrier qui voit les formes par coupes de vecteurs en étoile » 75 × 47 cm (1951)
- « Cabestan de l'âme sémaphore des robots – Capstern of soul » 42,2 × 64 cm (1952)
- « Additionneuse à cames et à treuils – additionneuse à treuils électrique » (1956)
- « Machine à calculer à treuils et à relais » 40 × 64,5 cm (1956)
- « Machine à calculer à treuils et à relais et disque embrayeur » (1956)
- « Machine à calculer à treuils et à balanciers » (1956)

- « Guitare additionneuse » 40 × 73,3 cm (1956)
- « Robot Adam sélénite – Chiasma des bandelettes optiques pour amener l'axe vertical de l'œil sur celui d'un objet » 41 × 65,5 cm (1956)
- « Une Machine à calculer binaire pourrait voir ainsi par la géométrie analytique dans la nature » 33 × 65 cm (1956)
- « Ancre de l'ame – Robot astronaute cybernétique » 34,5 × 64,5 cm (1957)
- « 5000 mots-racines d'Espéranto sidéral : le clavier de la machine à écrire = le clavier de la pensée » 56 × 64,5 cm (années 1950)
- « Bobine de fils électriques enregistreuse et associatrice adaptée à la cellule photo-électrique en mosaïque » 38,2 × 68 cm (fin des années 1950)
- « Toile métallique – méninge, associatrice d'idées » 36,5 × 64 cm (fin années 1950)
- « Espéranto sidéral » 53,2 × 66,5 cm (fin années 1950)
- « Lecture automatique – La machine à lire » 55,5 × 75 cm (non daté)
- « Rétine électrolytique » 36,5 × 94,5 cm (1957-1959) Liste des œuvres de Jean Perdrizet 329
- « Les chantiers cybernétiques – œil de robot – Lecture le 26/1/1964 – Centreur de gravité » 51 × 73 cm (1964)
- « Lœ [sic] cœur » (1964)
- « Les nerfs de la douleur » 60 × 155 cm (1964)
- « Table en images de multiplication et d'addition » 55,5 × 75,1 cm (1967)
- « Machine à dessiner et à écrire en cursives – Machine à lire – Espéranto dessiné au clavier – Machine à lire optique instantanée » 53,5 × 87,3 cm (1967)
- « Machine à lire et à voir à résistances liquides » 21 × 27,4 cm (années 1960)
- « Table traçante périphérique d'ordinateur imaginatif » 75 × 55 cm (années 1960)
- « Lunette lisante holographique – Machine à lire par spectres sans calcul » 51,5 × 65,5 cm (années 1960)
- « Machine à lire à résistances liquides – Résumé » 52,5 × 69 cm (années 1970)
- « Montagne des 31 dividendes » 74 × 57 cm (1971)
- « Cerveau à eau » 38 × 326 cm (1974)
- « Imagination cybernétique stylo magnétique pour l'imagination du robot » 50 × 66 cm (années 1970)
- « Machine à lire à résistance liquide pour tri postal ou ordinateur ou aveugle – Machine associatrice d'images de lettres cybernétiques à résistance liquide – Roulement des personnages dans la vision du robot au cinéma » 55,1 × 74,7 cm (années 1970)

GALERIE CHRISTIAN BERST (PARIS)

- « Intégraphe automatique » 40,5 × 69 cm (1934-1941)
- « Véritable cerveau photo électrique » 31,5 × 167,4 cm (1935)
- « Rotation » 35 × 124 cm (1935)

- « L'algèbre est une sorte de sténographie/formule de la clothoïde » 30,5 × 19,2 cm (années 1930/1971)
- « Machine à calculer – Exemple d'une additionneuse nouvelle à cames » 28,9 × 82 cm (1940)
- « Intégraphe lecteur de la courbe à intégrer » 31,2 × 39,7 cm (1941)
- « Radio-ame » 38,2 × 105 cm (1942/1964)
- « Un robot ouvrier qui voit les formes par coupes de vecteurs en étoile » 64 × 40 cm (1951)
- « Traité de géométrie » 37,2 × 64,6 cm (1949)
- « Toile métallique » 40,3 × 70,5 cm (1952)
- « Cabestan de l'âme sémaphore » 45,4 × 75 cm (1952)
- « Robot Adam sélénite – Chiasma des bandelettes optiques pour amener l'axe vertical de l'œil sur celui d'un objet » 41 × 65,5 cm (1956)
- « Espéranto sidéral » 52 × 215 cm (1958)
- « Espéranto sidéral » 60 × 75 cm (1958)
- « Espéranto sidéral » 55,5 × 75,5 cm (1958)
- « Mechanics toils recipients » 56 × 75 cm (1958)330
- « Alfabet [sic] of roots » 56 × 74,8 cm (1958)
- « Tops moteurs – Moteurs Selsyns à électro-différentiel pour robot astronaute » 60 × 75 cm (années 1950)
- « Robot cosmonaute » 50,5 × 65 cm (années 1950)
- « Pipe Volante – Hélicoptère à eau – Machine de Dean » 53,8 × 68,3 cm (années 1950)
- « Coupe du cerveau » 44 × 50,5 cm (1962)
- « Machine à calculer toute électrique » 54,9 × 73,6 cm (1963)
- « Hélice pleine d'eau », 53 × 75 cm (1963)
- « Myographe » 36 × 68 cm (1963)
- « Les signaux du code de la route » 56 × 70 cm (1964)
- « Oscillographe à friction » 56,5 × 143,5 cm (1965)
- « Hélicoptère centrifuge » 56 × 75,5 cm (1965)
- « Tables en images de multiplication et d'addition » 56 × 75,2 cm (1967)
- « Tables en images de multiplication et d'addition » 57,5 × 75 cm (1967)
- « Tables en images de multiplication et d'addition » 57 × 74,5 cm (1967)
- « Machine à dessiner et à écrire en cursive » 53,2 × 73,2 cm (1967)
- « Machine à lire pour ordinateur » 54,5 × 75,2 cm (1968)
- « Hélicoptère à dissymétrie centrifuge », 54,7 × 74,6 cm (1968)
- « Pendule lecteur » 53 × 74,7 cm (1969)
- « Table traçante périphérique d'ordinateur imaginaire » 71 × 53 cm (années 1960)
- « Machine à lire et à voir pour robots cosmonautes auto-reproducteurs » 58 × 64 cm (années 1960)
- « Téléviseur électrolytique » 54,4 × 75 cm (années 1960)
- « Fusée palan – Rocket Tackle – Rocket Crane » 53 × 210 cm (1970)
- « Coussin d'air volant » 37 × 23 cm (1971)
- « Tackle Rocket – Turning pipes in gammed cross – Tackle space ship » 48,2 × 84,5 cm (1971)
- « Fusée palan d'Apollo XX ou hélicoptère lunaire ou terrestre air au lieu d'O » 55,4 × 71 cm (1971)

- « Livre traduit en espéranto » 54,5 × 67 cm (1971)
- « Machine à lire » 56 × 75,5 cm (1971)
- « Buître [sic] à pales variables » 55,4 × 71 cm (1971)
- Lettre « Machine à lire au laser » 29,7 × 21 cm (1971)
- « L'optimal – minimal » 56,3 × 196,5 cm (1971)
- Lettre « La clothoïde » 40 × 22,4 cm (1971)
- « Robot qui construit un pont ou une maison » 49,6 × 65 cm (1971)
- « Ancre de l'âme » 50 × 172,5 cm (1971)
- « Robot sélénite » 64,5 × 36,6 cm (1971)
- « Vaucanson Androïde » 37 × 59,5 cm (1971)
- « Reconnaissance d'un avion » 53,5 × 65,5 cm (1971)
- « Voici même à quoi se résume tout cet hélicoptère centrifuge », avec le récépissé de la US Air Force, 51 × 45,5 cm (1972)
- « Table spirite télégraphique » 50,6 × 65,7 cm (1972)
- « Les esprits voient par holographie » 30,8 × 22,5 cm (1972)
- « Le mathématicien de l'au-delà » 54,7 × 75,4 cm (1 972)
- « Tambour traçant, périphérique d'ordinateur », 53,5 × 72 cm (1972)
- « Oui-ja électrique de 1 cm de manipulation » 49,5 × 66 cm (1972)
- Lettre « soucoupe volante – dissymétrie centrifuge » 20,9 × 13,5 (1972)
- « Soucoupe volante centrifuge », 55,6 × 92,5 cm (1 972)
- « Hélicoptère centrifuge, dessin d'exécution du 1/4 » 61 × 76 cm (1973)
- « Intérieur de Lumandar » 34,8 × 71,8 cm (1974)
- « Celestial language for robots on moon – sideral esperanto – logical esperanto » 44 × 74 cm (1974)
- « L'imagination artificielle », 37,5 × 145,7 cm (1974)
- « Machine à lire à résistance liquide » 52 × 48,5 cm (1974)
- « Balance spatiale pour hélicoptère puis astronef-treuil – Invention américaine contre la crise de l'énergie – Rétine ou fond de caméra robot » 32 × 72,5 cm (1975)
- « Soucoupe volante OVNI » 37,8 × 70,5 cm (1975)
- « Un des 100 ampèremètres » 37 × 49,5 cm (1975)
- « Théodolite à quatre photopiles » 32 × 72 cm (1975)
- « Lecture de lettres-chiffres » 36,7 × 27 cm (1975)
- Livret Langue T (années 1970)
- « Lemme de la machine à pensée à résistance liquide, milieu trouvé par galvanomètre à cadre mobile – Curseur-imagination, piano des vitesses du crayon – Table traçante de l'ame » 32,5 × 71 cm (années 1970)
- « Machine à lire et à voir » 56 × 25,5 cm (années 1970)
- « Le corbeau et le renard » 25 × 64,5 cm (années 1970)
- « Machine à photographier le passé » 47,5 × 41,5 cm (années 1970)

COLLECTION ABCD BRUNO DECHARME (MONTREUIL AND
DONATION TO MUSÉE BEAUBOURG, PARIS)

- « La tour logarithmique » 49 × 102,5 cm (1949)
- « La pensée géométrique analytique – Traceur électromécanique – Ancre de l'ame » 54,4 × 192 cm (Fin années 1950)
- « Oui-ja enregistreur ou planchette spirite » 52,5 × 65,5 cm (1970)
- « Machine à écrire avec l'au-delà » 54 × 65,7 cm (1971)

COLLECTION D'ART BRUT DE LA GALERIE DELEUZE-ROCHETIN
ALAIN BOUILLET (ARPAILLARGUES, UZÈS, GARD)

- « Lemme de la machine à pensée à résistance liquide, milieu trouvé par galvanomètre à cadre mobile – Curseur-imagination, piano des vitesses du crayon – Table traçante de l'ame » 32,5 × 71 cm (années 1970)

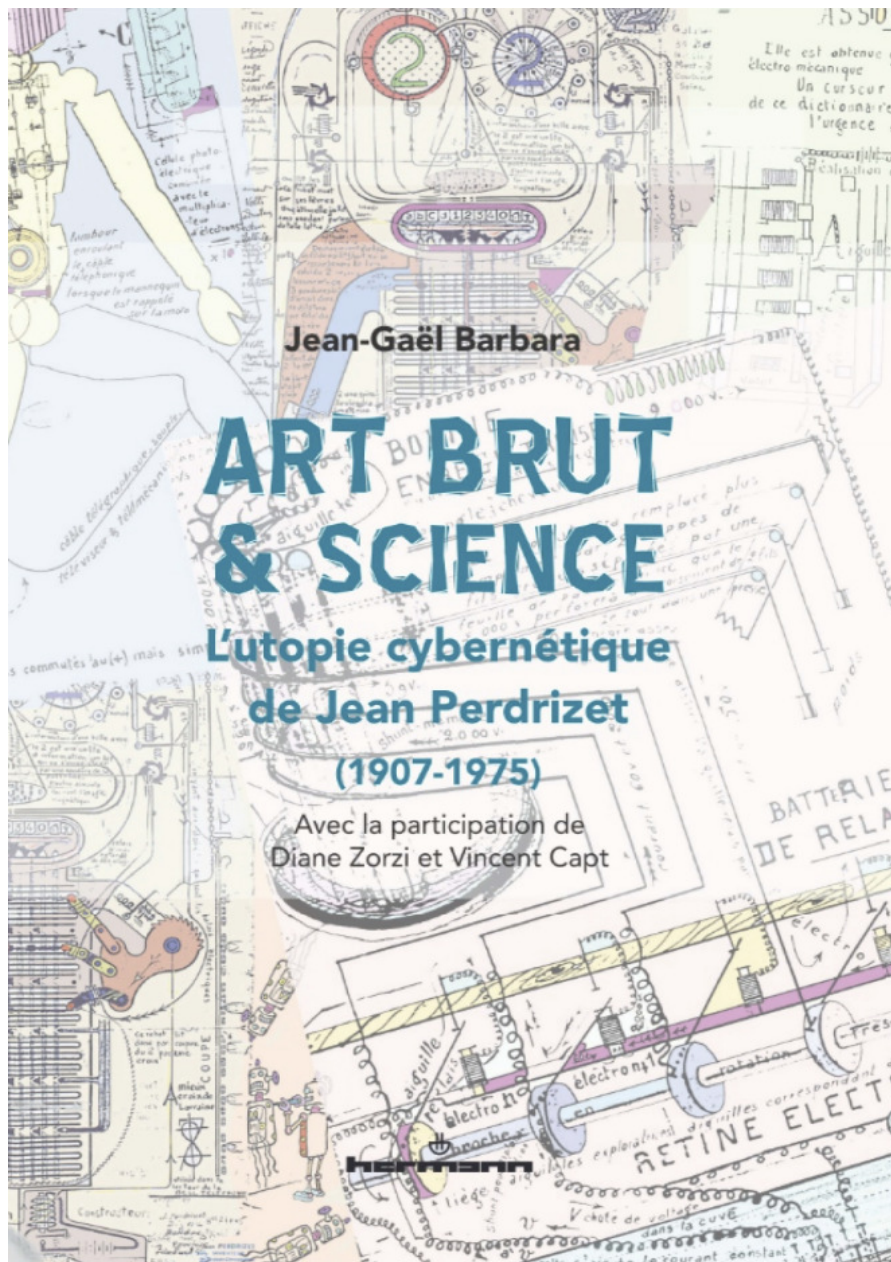
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