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► **To cite this version:**

Jean-Gaël Barbara. L'imaginaire spatial, constitution, essence et fonction dans l'œuvre de Jean Perdrizet (1907-1975). *Sociétés & Représentations*, À paraître, printemps 2024 (57), pp.77-96. hal-04297693v2

HAL Id: hal-04297693

<https://hal.science/hal-04297693v2>

Submitted on 26 Mar 2024

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THE SPATIAL IMAGINARY WORLD OF JEAN PERDRIZET (1904 - 1975)

ITS CONSTITUTION, ESSENCE AND PSYCHOLOGICAL FUNCTIONS



Montage, J.G.B., Fonds Bernard Autrand-Perdrizet, with our thanks.

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Keywords: spatial imaginary, *art brut*, folk art, myth, *créateur d'art brut*, Jean Perdrizet, science fiction

The imaginary worlds of space bear witness to an essential human curiosity and space cultures, as evidenced by artifacts from the conquest of space, but also by art works¹, or even scientific or mythical visions that come under the heading of scientific imaginary worlds. We define these worlds as sets of representations, outside science, loosely associated according to a certain sensitivity, creating fictitious worlds at work in science or relating to scientific knowledge. A spatial imaginary world is an imaginary world of

¹ Publications by the *Musée imaginaire de l'espace*, CNES include: *Les représentations de l'espace*, Paris, CNES, 2007; *L'espace, si près, si loin*, Paris, CNES, 2009; *Phase zéro: 96 propositions spatiales, 33 impressions spatiales*, Paris, CNES, 2009; *Histoires minuscules de l'espace*, Paris, CNES, 2012. See also the exhibition *Outer Space Faszination Weltraum* from October 3, 2014 to February 22, 2015 at the *Bundeskunsthalle Bonn*, National Center for Art and Exhibitions of the Federal Republic of Germany, Bonn & German Center for Aeronautics and Aerospace (DLR).

space, based on observations and theories, sometimes with a strong symbolic dimension. In fact, a spatial imaginary world is always partially detached from reality, structuring itself into a narrative that can take on the dimension of a myth².

Indeed, the German psychologist Wolfgang Kretschmer (1918-1994)³ insisted that any imaginary world of space – even contemporary ones – derives from an unsurpassable myth of space, because man can never, in his view, think of immense space in any other way. Only this myth can give it meaning, through an inner quest for emotions and subjective forms of perception that are themselves determined by this myth, in a circular, spellbinding way at the heart of its constitution. Kretschmer adopts the idea that space exists for man under two instances, that of the rationally acquired inventory of external knowledge, and that of the myth that belongs to the interiority of being.

In the imaginary world of space, there are always two anthropological instances of a representational nature. According to the first, space is located in the beyond, outside the limits of the terrestrial world, by a partition between heaven and earth, day and night. Space is the site of a supernatural world, constructed as a psychological space of beliefs, myths, cosmogonies and reflections on the origin of gods and the world. A second instance makes it the familiar object of the celestial vault, which never completely leaves man in his wanderings, indicating a close and familiar framework – distant directions useful for orientation, the rhythm of seasons, days and hours – and giving him the possibility of first empirically predicting certain events such as eclipses⁴.

According to Kretschmer, reason can act as an intermediary between these two instances⁵. This rational intermediary is what we call a "projection space"⁶. This concept reflects man's often remarked attitude of projecting symbols, divinities and myths onto perceived space, analyzed geometrically in constellations, so as to establish correspondences between the two instances of space. In this way, a "spatial imaginary world" is created as a representation of space possessing different degrees of internality (myths, beliefs, moral values) and externality (observations), as well as realism (relative

² See J.G. Barbara, *Art Brut & science, L'utopie cybernétique de Jean Perdrizet (1907-1975)*, Paris, Hermann, 2021, 348 p.; J.G. Barbara, "La constitution des imaginaires scientifiques : L'imaginaire cybernétique de Jean Perdrizet (1907-1975)", in C. Chérici (ed.), *L'imagination dans les sciences*, forthcoming. All aspects of this article concerning *art brut*, psychological analysis and the life and work of Jean Perdrizet are discussed in detail in the first publication.

³ Son of German psychiatrist Ernst Kretschmer (1888-1964).

⁴ The pole star indicates a constant northerly direction. Texts relating to this kind of observational astronomy have been found as far back as Babylonian times, when eclipses were predicted from the notation of planetary ephemerides. See O. Neugebauer, *Astronomical cuneiform texts: Babylonian Ephemerides of the Seleucid Period for the Motion of the Sun, the Moon, and the Planets*, Berlin, Springer, 1955. These include the Saros cycle of the Chaldean astronomers, the star list of Hipparchus (c. 190-c. 120 BC) and the 7th-century star list from the Dunhuang cave in China.

⁵ W. Kretschmer, "Experiencing space and feeling totality", *Liberté*, 20, 1978, p. 28-38.

⁶ This concept of "projection space" reflects the often-remarked function of space as a place for human reverie and the projection of abstract ideas. In its general psychological aspect, this concept joins that of the Italian school of concrete psychology inspired by Franz Brentano and his theory of the intentional character of representations. See Liliana Albertazzi, "De la psychologie descriptive à l'analyse concrète du psychique : Florence et Padoue au début du ^{XXe} siècle", in Charles-Édouard Niveleau (ed.), *Vers une philosophie scientifique : Le programme de Brentano*, Paris, Demopolis, 2014, pp. 249-277. This theoretical aspect is useful for understanding the links between different projection media.

positions of stars) and symbolism (myths), according to a system of spatial coordinates (constellations)⁷.

It is this space of projection at work in the constitution of a spatial imaginary that we wish to study in the case of a work of *art brut*. What we call "art brut" can be defined as the essential and fundamental activity of an individual making fold art to exist and survive for himself in a world perceived as hostile for objective or subjective reasons, in a certain social isolation. The creator of *art brut* creates his own symbolic world centered on his own existence, in a more or less complex and singular way, sometimes with great openness to the world, and sometimes with extreme awareness and lucidity. He is therefore neither ignorant nor cut off from the world, but has that independence of mind and freedom of tone that often accompany a relative indifference to others and to conventions. His isolation is really just a relative difficulty in communicating with others, or at least some others. The continuity of the normal and the pathological between socially comfortable artists and these individuals erases mental illness as a defining characteristic of the creator of *art brut*, to focus the point of view on the singularity of the work and on the feat of creation as a process of self-transcendence and reconstruction, confronting self alterity, and its corollary, the perception of a world perceived as violent, the reconstruction of which transforms the creator into the Savior of himself and, from his point of view, of the world as a whole, in accordance with an unspoken existential strategy aimed at reconciling himself with the world.

For an individual considered in isolation, such as a creator of *art brut*, space can become a place of personal reverie and a space of projection, of construction of the self and of a new world. Bachelard's *Poetics of Space* would say that, for this dreamer of dwellings, space becomes a happy space that reflects a new way of inhabiting the world⁸. Space then becomes a space of well-being, expressive freedom, contestation or creative exorcism of fears and anxieties⁹.

We propose to analyze the spatial imaginary world of *art brut* creator Jean Perdrizet (1907-1975), an assistant engineer at the *Ponts et Chaussées*. Throughout his life, this atypical character created plans for robots and spacecraft, building an original

⁷ These aspects have been developed in the work of Gilbert Durand (1921-2012), Gilbert Durand, *Les structures anthropologiques de l'imaginaire*, Paris, PUF, 1960; Gilbert Durand, *Ciel et Symbolisme*, Encyclopaedia Universalis. Anthropologist and ethno-astronomer Louis Cruchet has specialized in the analysis of constellation imagery in Polynesia, and more generally in comparative studies of various civilizations, past and present.

⁸ Gaston Bachelard, *La poétique de l'espace*, Paris, PUF, 1957. These reflections by Bachelard herald an ecologism, like the environmentalism of sociologist Frédéric Allamel. These aspects of the construction of dwellings, but also dwellings in the broadest sense (natural spaces) and symbolic dwellings, are essential to understanding the construction of imaginations as peaceful places to live, especially among creators of *art brut*, like the cocoons that people on the autism spectrum create for themselves to soothe their anxieties. This new way of conceiving space also echoes Michel Foucault's concept of the "heterotopia", where particular spaces are thought of as symbolic receptacles of the world. This symbolic over-valorization leads to an inversion in the sense that these spaces become mirrors of the world, their center and point of reference, like the gardens of Babylonian palaces recreating the biological diversity of conquered territories.

⁹ Such a space of freedom can also be likened to the small surfaces of their wooden beds, which prisoners in Nazi Germany's labor camps (Dora) used to compete with each other to carve out an imaginary world enabling them to forget reality for a few moments. See J.G. Barbara, 2021. In art therapy, the blank sheet of paper offered to patients for free graphic expression also represents a space for symbolic projection, enabling mediation with caregivers. See Ivan Darrault-Harris, Sonia Grubits, "Le paysage dessiné : un espace de projection identitaire", *Actes Sémiotiques*. Online: <https://www.unilim.fr/actes-semiotiques/347>.

personal myth. Unable to become the engineer his family so desired due to a number of handicaps, he created the work that made him the engineer he needed to be in order to survive.

By studying this work as a space of projection, we can trace the narrative thread and representations of this imaginary space, dissociating the real from its beliefs and the personal construction of its creator. The personal spatial imaginary of a given individual gives meaning to his or her personal history through the constitution of a myth. This myth often functions as an a posteriori system of rationalization for an individual seeking to redefine his or her relationship with the world. This may be the case for everyone, but this is even more dramatic for a creator of *art brut* whose fiction is a necessity of life. Through these analyses, we will be able to better appreciate what a spatial imaginary world is, how it is constructed and what its psychological functions may be, well beyond *art brut*.

An overview of Jean Perdrizet's spatial imagination

Jean Perdrizet's graphic work consists mainly of large-scale plans drawn on a drawing board, originally with black ink, and then reprographed. They concern robots and spacecraft designed to take them into space to save mankind. This personal myth is first and foremost about communication with extraterrestrials, robots and the souls of the dead, then about the possibility of reincarnating human souls in robots, before the destruction of mankind, perceived as inevitable.

This imaginary was constructed in the context of cybernetics, in a "cybernetic utopia of communication"¹⁰, and more broadly in the context of the Cold War, the space race, the nuclear arms race and the first oil crisis. All these contexts are clearly apparent and interwoven in Perdrizet's work, with the fear of a nuclear apocalypse, and around beliefs, some spiritualistic and others cultivated in American science fiction. The myths at play in these contexts, seen through a highly personal prism, are above all the myth of the intelligent extraterrestrial¹¹, the myth of the robot decried by cybernetics, and the myth of a mechanical engine ideal for reaching space at low cost.

A brief biographical sketch helps us to better understand the formation of this spatial imaginary. Jean Perdrizet was born in 1904 into a family of schoolteachers in Villers-la-Faye in the Côte-d'Or region of France. Indeed, as early as his high school years in Briançon, he was building plans for human-powered flying machines, such as his 1923 pedal-powered helicopter¹² which are reminiscent not only of Leonardo da Vinci's imagination, but also of the conquest of the sky in the 1920s.

¹⁰ J.G. Barbara, , "L'œuvre de Jean Perdrizet, entre invention scientifique et utopie", in *Jean Perdrizet, Deus ex machina*, catalog of the exhibition of plans by Perdrizet, Paris, galerie Christian Berst, 2012; J.G. Barbara, 2021, *op. cit.*

¹¹ See Diane Zorzi, in J.G. Barbara, 2021, *op. cit.*

¹² "Hélicoptère à moteur humain", 95 × 75 cm, 1968, Musée de Lille, LaM. This drawing is marked in French "Built in 1923". Perdrizet kept this project from 1923 until his death. In this and other drawings, we find press clippings from 1968-1969 (*Le Méridional*) relating to the construction of this machine, with the headlines, "En levant le voile sur l'invention de 'l'hélicoptère à moteur humain' de M. Perdrizet avec la *Royal Aeronautical Society*", "L'inventeur dignois parviendra à faire décoller son 'moteur humain'?", "Les prochains voyageurs pour la lune seront peut-être Dignois?". José Argémi mentioned having seen the relics of his pedal-powered human-engine helicopter in 1971, when he visited Jean Perdrizet in his "petit réduit":

Jean Perdrizet failed to become an engineer of *Ponts et Chaussées* after training by correspondence, lacking the means to study in Paris. In 1939, suffering from tuberculosis of the bone, he was forced to spend almost a year bedridden in great pain. While convalescing in a state of extreme fatigue, his father forced him one last time to prepare for the competitive engineering examination, which caused him a profound psychological collapse. It was at this point that he began a series of personal drawings, which he continued until his death in 1975, returning after his convalescence only to temporary jobs of shorter and shorter duration.

Today, his work is considered a work of *art brut*, exhibited in several museums¹³ and regularly in international exhibitions. In 2013, I had the good fortune and opportunity to unearth the largest surviving collection of his drawings in the personal papers of neuroscientist Jacques Paillard (1920-2006), with whom Perdrizet maintained an extended correspondence from the late 1950s until his death in 1975. On my initiative, these drawings were donated to the Archives nationales by the Paillard family, and a research program was launched.

Jean Perdrizet's spatial imaginary world is above all that of an isolated engineer who paid extreme attention to the themes of robots and flying machines as liberating figures associated with the myths of the conquest of the sky and space, in a way that is common among those suffering from psychic afflictions and great social isolation¹⁴. However, during the 1930s, it was the world of spirits that most fascinated the young Perdrizet, before his psychic collapse with the new crossover between spiritualism and electroencephalography in the mid-1930s. When this new technique succeeded in measuring brain waves on the surface of the head, Jean Perdrizet imagined a revival of the spiritualism cultivated by his family. From then on, and before the age of cybernetics, Jean Perdrizet imagined that a machine could calculate and emit signals in the form of waves, just as the brain seemed to him to function in a similar way. For him, as for other

strings, rocket tanks made from tin cans, electrical boxes and wires, switches, radio lamps and, above all, bicycle tubing.

¹³ La Collection de l'Art brut, Lausanne (drawings by Jean Perdrizet sent to correspondents close to Jean Dubuffet from 1958 onwards, then sold); Musée LaM d'art contemporain et d'art brut, Lille (works from the personal papers of CNRS Mathematician José Argémi and Adrien Dax, acquired by Madeleine Lommel of the L'Aracine association and donated to LaM in 1999 or acquired subsequently); Musée Gassendi, Digne-les-Bains (works by Jean Perdrizet, from his sister Renée, donated to the municipality of Digne-les-Bains, then to the association of Dr. Christian Costard, who donated them to the Musée Gassendi); works by Jean Perdrizet from Jacques Paillard's personal papers, some of them collected by Jean-Jacques Viton and donated to the Musée Gassendi); Archives nationales (Pierrefitte-sur-Seine site, letters and drawings by Jean Perdrizet from scientific correspondence addressed to Jacques Paillard, preserved in the Jacques Paillard collection and donated to the Archives nationales by family and Jean-Gaël Barbara); Galerie Christian Berst, Paris; Collection abcd by Bruno Decharme (Montreuil) and Beaubourg museum in Paris (donations by B. Decharme); Galerie Deleuze-Rochetin, Alain Bouillet (Arpaillargues, Uzès, Gard).

¹⁴ This theme of flying machines is found among many other *Art Brut* creators at the end of the 19th century, but especially from the 1920s onwards. Among these creators are L.C. Spooner, C. Dellschau and a patient from the Hôpital Sainte Anne in Paris, whose works have been compared, J.G. Barbara, 2021, *op. cit.* p. 143 and J.G. Barbara, "Les créateurs-inventeurs", in *Art brut, collection Bruno Decharme*, Bruno Decharme and Barbara Safarova (dir.), Paris, Flammarion, 2014, p. 192-193. Also see the English version : *Creators – Inventors*. This trend refers to an aspiration to escape and testifies, according to Ronan Le Roux, to a long tradition of machinic themes in the productions of asylum art. See J.G. Barbara, 2021, *op. cit.* p. 143; J.G. Barbara, 2014, p. 192-193.

spiritualists, belief in telepathy evolved into a general myth of communication between the living, machines and the dead.

With this new spiritualism combined in the 1940s with his interest in machines (mechanical calculating machines and electromechanical reading and seeing machines for the blind), Jean Perdrizet developed a project for an intelligent, imaginative robot, capable of emotions before the age of cybernetics, and which harks back to the true robot myth of the 1920s-1940s. Then, with the rise of cybernetics, and following the studies on machine reproduction by physicist John von Neumann (1903-1957), his robot became a "self-replicating" robot that could conquer space and save mankind from nuclear apocalypse (Fig. 1). Jean Perdrizet conceived the idea of an eternal human soul, when the souls of dead men could be "copied" into the artificial brains of self-replicating robots, in a kind of reincarnation that would enable contact with other extraterrestrial civilizations and the dead.

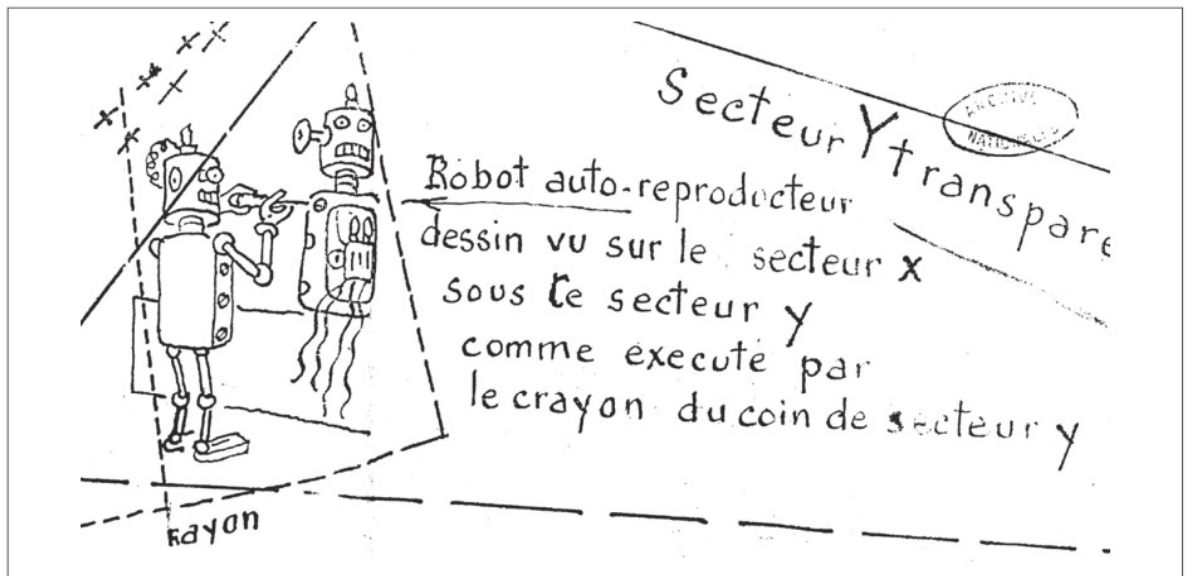


Illustration 1: A "self-reproducing robot" from Jean Perdrizet's drawing entitled "Robot qui imagine des dessins géométriques", 1962, Archives nationales.

In a small booklet for Jaques Paillard entitled "La perception visuelle du robot cosmonaute", Jean Perdrizet summarized the capabilities of his self-replicating robot, which will be able to see, read, use a specific universal language (Perdrizet's "t-language") and spacecraft to gain space:

"[...] there are already computers that are used to calculate others, so computers with a machine to read and see will be able to build others [and] will be self-reproducing [...] they will build their own spaceships, and that means free of charge, and man will no longer be able to stop them! We have built PERCEPTRONS [sic] capable of laying one brick on top of another by aligning their edges"¹⁵.

It was in the early 1950s that Jean Perdrizet arrived at a first synthesis of his work devoted to his robot, as evidenced by his most emblematic and famous drawing: *Un robot ouvrier qui voit les formes par coupes de vecteurs en étoile – La Révolution cybernétique – Son anatomie* (A worker robot that sees shapes by star-shaped vector cuts – The Cybernetic Revolution – Its Anatomy)¹⁶ (Ill. 2). In 1953, Jean Perdrizet was finally able to explain the function of the robots in his spatial imaginary world in a strange drawing entitled *Robots-Astronautes auto-reproducteurs* (Self-reproducing astronaut robots)¹⁷. In this drawing, Jean Perdrizet depicts various robots both on Earth and in space. The central figure is a standing man, seen from behind, noted A, looking at a cinema screen, thick curtain drawn to the right, on which a science fiction film is projected. Beneath the title, a typed cap underlines a starting point for reading the drawing: "Man was watching a film that a robot – typophone [sic] went to pick up on the planet Mars thanks to an astronautical rocket". According to Perdrizet, Man has built such a robot to make contact with the aliens on Mars, represented by a strange "physicist from Mars". On Mars, with the "distant Earth" in the sky, this physicist appears as a sort of bipedal dinosaur with an elephant trunk, wearing glasses and experimenting with the fall of a ball on an inclined plane equipped with markers to measure its speeds, in the manner of Galileo in his time¹⁸.

On Earth, with the Sun, Saturn and Moon in the distance, close to the viewer, an "Earth physicist" builds a "humorous robot that forges another [...] self-replicating". This physicist, who is von Neumann, seems to be placing a human "brain" inside his robot. But surely this is a metaphor for the transfer of a human soul into the robot, given that Perdrizet spent most of his life imagining an artificial brain for his robot. For him, the humorous robot represents a "POLIS ROBOT" "where faculties would be grouped by nature and not by robot individual". Each robot would possess a "kinematic memory", "imagination" and "sight" based on a "star-shaped cut"¹⁹ of the images brought by television to recognize them" using "photoelectric cell[s]", as well as a "formal logic" for "will"²⁰.

¹⁵ Booklet by J. Perdrizet for J. Paillard "La perception visuelle du robot cosmonaute", Archives nationales, p. 3.

¹⁶ "Un robot ouvrier qui voit...", 1951, Musée Gassendi, Archives nationales and Galerie Christian Berst, 64 × 40 cm. Only the version in the Archives nationales was not annotated between 1957 and 1959.

¹⁷ This is the sixth sheet in a series from the Archives Nationales on robot vision and pattern recognition, entitled *Parapsychologie cybernétique – résonateur lecteur – cerveau électrolyte – robots astronautes auto-reproducteurs*.

¹⁸ Galileo's inclined plane experiment. See, for example, Charles Thurot, "Expériences de Galilée sur la pesanteur", *Journal de physique théorique et appliquée*, no. 3, 1874, p. 160-165.

¹⁹ Image analysis by sectoring, analogous to pixel analysis.

²⁰ This presentation of the robot probably dates from the 1940s. Elements of it can be found in the series of six drawings entitled "Dans l'usine cerveau" (In the brain factory) in the Archives nationales, on "visual accommodation imitated by a mechanical device", the "device realizing the explorer star". The second sheet mentions "the television [which] would link the robot to its external brain", "the kinesthetic sense" and "the coordination of movements". Jean Perdrizet mentions in the first sheet that he corresponds with "Wensley", the famous builder of the Televox robot of 1927 – Roy James Wensley born in 1888 – probably still in business in the 1940s, and the subject of articles in the popular press during the 1930s.

A closer look at some of the details in this drawing reveals other themes in Perdrizet's spatial imagination. Rockets and flying saucers for robots appear here, as does an "atomic rocket", below which is a diagram of the decomposition of the force vectors of a flying saucer²¹. On the other hand, the reflection on the dissemination of robots in space by rockets and by self-reproduction responds to the more general view typed in the central part of the drawing relating to the importance of artificial intelligence in space, which represents a central myth for Jean Perdrizet:

NO! If thought really is important in the Universe, and its "pursuit" on earth leads us to believe so, it must not be limited to the kind of phenomena we call vital. We are only familiar with the human and animal personality, and we are unaware of the various other ways in which consciousness may have awakened in the universe, but contrary to prejudice, we have no reason to believe that it is non-existent outside the terrestrial living kingdom and its planetary analogues²².

For Jean Perdrizet, the rise of artificial intelligence in space also represents the only guarantee of survival for the intelligence of living beings, both terrestrial and extraterrestrial, leading to intercommunication in space and a kind of universal harmony, another common space myth. In Perdrizet's case, this utopia of communication is based on cybernetic robots capable both of reproducing human souls and of dialoguing with the souls of the dead, who, for him, gravitate around the earth²³.

In the same drawing, Jean Perdrizet also explains the source of energy, plutonium²⁴, to be used for his spacecraft, his "atomic rocket" and his "plutonium helicopter", shortly after the American Orion project for a space vehicle with pulsed nuclear propulsion²⁵.

²¹ This little cryptic diagram is annotated in other drawings.

²² This text is an extract from a 75-page book that Jean Perdrizet appears to have sold by mail order, using a P.O. box in Marseille, where he regularly visited teachers.

²³ Jean, a precocious follower of Esperanto, will spend several years of his life inventing his own universal language with its writing system and pronunciations, to facilitate exchanges between artificial intelligences in space.

²⁴ Perdrizet cites the Marcoule plutonium extraction plant that was being planned at the time. The first five-year investment plan for the atom, launched in 1951 by Félix Gaillard, Secretary of State for the French Commission for atomic energy CEA, called for the creation of a plutonium production, processing and extraction center at Marcoule (Gard, France). Samuel Cazenave, *Félix Gaillard, le président*, Paris, Ginkgo, 2011, p. 112. This plutonium was also to be used to operate autonomous cybernetic machines and factories, such as the "Blondel power plant" drawn at the bottom of the page of the drawing studied as an autonomous "cybernetic equipment building without a single electrician". This was the Donzère-Mondragon hydroelectric plant, where Jean Perdrizet worked between 1944 and 1947, on the canal of the same name, on the banks of the Rhône, at the André-Blondel dam in Bollène (Vaucluse), where Jean Perdrizet and his family were living at the time. The latter plant was supplied with radioactive ore by an underground auger extractor (Perdrizet's "plutonium mole-robot") and other remotely-controlled electric machines, forming a "network of telemechanics growing like a thinking plant without the help of men".

²⁵ See Diane Zorzi, in J.G. Barbara, 2021, *op. cit.* This major project linked to the Manhattan Project, which was intended to enable low-cost interplanetary travel at the time of the first oil crisis, was imagined in 1947 by Stanislaw Ulam and developed by *General Atomics*. It appears in the background of Hergé's album of the same date, *On a marché sur la Lune*. Hergé, *On a marché sur la Lune*, Casterman. The plates appeared between 1950 and 1953, and the album in 1954.

Space spiritualism and space as a refuge for humanity

Jean Perdrizet first considers space as a place of communication, then as a place of refuge after the destruction of humanity. Both projects are based on the necromancy and spiritualism of space. For, on the one hand, according to Perdrizet, telecommunication in space will involve not only machines communicating with each other, but also those communicating with the souls of the dead. On the other hand, for Perdrizet, man can hope to survive by having his immortal soul "copied" into the artificial brain of a robot.

Much of this comes under the heading of "space spiritualism", which was very common in the twentieth century and is part of the history of spiritualism itself²⁶. But the originality of Jean Perdrizet's vision lies in its abundance and in the cross-fertilization of his spiritism with various contemporary scientific sources, in a way that will endure as a spiritist belief throughout the twentieth century and even today for some.

This spiritualist doctrine is based on physical reflections that are not totally devoid of meaning, and which come close to quantum entanglement²⁷, but in a naïve and often false way. Indeed, Jean Perdrizet sees the universe as made up of an ether²⁸ considered as a substance distinct from matter, explaining the property of the effects of bodies and their transmission between them, such as gravitation. This concept can be likened to the current concept of the "quantum vacuum", a space without matter but not devoid of physical objects, whose oscillations make it possible to envisage very long-distance actions in space, including quantum entanglement²⁹. On the other hand, Jean Perdrizet imagines that the ether is the medium through which our thoughts, the souls of the dead, robots and Martians all propagate. Jean Perdrizet envisages thoughts and souls as "floating clouds" that travel as "ether waves", "immaterial", which would subsist in "eddies" in the form of neutrinos or electrons propagating at a speed greater than that of light, in a concept of space approaching the "quantum vacuum"³⁰. Jean Perdrizet equates the ubiquity and eternity of the soul or "psychon-soul" in space with the property of its particles, which – in the case of the electron, according to Perdrizet – have a "maximum probability of presence" around the atomic nucleus, "but [a] minimum probability of presence [in] the entire universe"³¹.

²⁶ See Diane Zorzi, in J.G. Barbara, 2021, *op. cit.*

²⁷ A phenomenon imagined in 1935 by Einstein, whose experimental demonstration was rewarded with the 2022 Nobel Prize in Physics, awarded in part to French physicist Alain Aspect.

²⁸ An ancient concept in physics that dates back to the 16th century.

²⁹ Correlation of the physical state of two particles even at very great distances in space.

³⁰ See works by Bernard Barbara.

³¹ Letter from Jean Perdrizet to J. Argémi, June 26, 1971, on the reverse of the drawing "Oui-ja enregistreur", collection abcd (Montreuil) – Centre Beaubourg, donation Bruno Decharme. Jean Perdrizet was inspired by the spiritualist theories of French psychologist Charles Henry (1859-1926) concerning his "biological resonators", his "psychic resonators" and his general theory of radiation; see Wilfrid-René Chéteoui, *La nouvelle parapsychologie : une expérience métaphysique*, Paris, F. Lanore, 1983, p. 55-57. Charles Henry's ideas were developed by parapsychologists who drew parallels between mind particles and the neutrino, such as the British amateur astronomer Vlademar Axel Firsoff (1912-1981) in the 1960s. No doubt Perdrizet could have further supported his theory with the concept of quantum entanglement, which implies the possibility of almost instantaneous transmission of information across the universe – like some physicists today who like to think of this as a form of neospiritism (quantum mysticism) – so sensitive was Perdrizet to the themes of telepathy, of the resurrection of individuals through the persistence of their souls throughout the universe, building plans for devices for communication with the afterlife and others for teleportation and resurrection.

Sensitive to the theory of relativity, Perdrizet also envisaged a time machine that would enable planets to be seen as they were in their past, in order to discover the inhabitants of vanished civilizations. Similarly, he believed it was possible to follow the vibrating particles of souls like photons from an extinguished lamp traveling through space, reviving and resurrecting the "disembodied souls" of dead men.

Space spiritualism thus exploits knowledge of theoretical physics to account for spiritualist beliefs and justify them *a posteriori*. Against the backdrop of the Cold War, Jean Perdrizet envisaged space spiritualism as a solution to the end of humanity in the event of a nuclear apocalypse. His anxieties are transformed into a joyful utopia through his "creative exorcism", developing a parallel imaginary world of space as a place of refuge and brotherhood for the immortal souls of mankind. In this exercise, Perdrizet replaces the horror of a nuclear explosion with the joy of imagining the infinite self-reproduction, in time and space, of robots dispersing in a kind of chain reaction.

What you have to see in my robot [...] is more than an atomic bomb, it's a self-replicating robot, a generation of robots, which once triggered will reproduce in the universe without the help of man and without man being able to stop them in this³² integration of matter into intelligent mechanical brains, not a bestial atomic disintegration. It's more than the Apocalypse. As for our eternal soul, which the robot won't have (besides, it seems that animals don't have one), our soul could be [sic] a *psychon*, a new atomic particle whose movements, instead of being Brownian and therefore disordered, are ordered in geometric figures. Heat has only one ordinate, thought has two, x and y³³.

Mythical composition of Jean Perdrizet's spatial imaginary world

The ways in which Jean Perdrizet constructs his imaginary space world are a weaving together of the reality of the conquest of space, various ancient myths, more recent science-fiction myths, and his own personal history. This weaving results in the constitution of a projection space that is a complex representation of space with symbolic and mythical personal aspects. It is possible to envisage a chronology in the constitution of this imaginary world, which takes the form of an intimate, mythical science fiction in which ancient myths are interwoven: the disappearance of humanity (flood/nuclear apocalypse), the creation of a new humanity, resurrection, extraterrestrials around the central mythical figure of the space engineer. Such mythic recycling is at the very foundation of all mythic creation, as recent research into the genealogies of ancient myths confirms³⁴. These forms of borrowing, also at work in Perdrizet's work, come also close to some of the creative processes of science fiction. In fact, American science fiction dealing with space has been built around the borrowing of themes and beliefs in a practice of

³² Allusion to nuclear fusion. Jean Perdrizet imagines that robots will swarm throughout the universe via a chain reaction comparable to the chemical reaction of nuclear fission, but based on nuclear fusion with a decrease in entropy characterizing an increase in the order of the universe (unlike the nuclear bomb and the concomitant disappearance of order).

³³ Letter from J. Perdrizet to J. Argemi, June 26, 1971, on the reverse of the drawing "Robot cosmonaute", Galerie Christian Berst.

³⁴ This is what the new mythology demonstrates, compared with statistical methods and the collection of masses of data mapped on a planetary scale. See : Great myths? Rencontre avec Jean-Loïc Le Quellec, "Existe-t-il des mythes universels?", *Les grands dossiers des sciences humaines*, No. 37, Dec. 2014, Jan.-Feb. 2015; "Pourquoi certains mythes sont communs à l'humanité entière", *Le Monde*, June 21, 2020.

*transfictionality*³⁵ often with the theme of the founding of a new world in the background³⁶.

At the age of sixteen, Jean Perdrizet already began to develop his own instantiations of common myths defined by idealized collective representations, the first of which was the imaginary world of the conquest of the sky in the 1920s, the second the age-old myth of the robot (artificial man) surpassing man and capable of replacing him in every way. Additional myths can be added: the myth of the new engineer, the myth of the intelligent extraterrestrial and the myth of the refoundation of humanity. By exorcising the anxieties of these myths in their modern, futuristic versions – the fear of new technologies, the fear of alien invasion, the fear of nuclear apocalypse – Perdrizet declines them into myths in the category of man's fundamental aspirations, such as the myth of progress, the myth of the new engineer, the myth of artificial man, the myth of the extraterrestrial, the myth of space, the myth of universal brotherhood and the myth of the redemptive refounding of humanity after its disappearance. Extraterrestrials and space then become central elements as, respectively, humanity's Saviors and refuges.

Space as a playground for new inventions

Jean Perdrizet's creation of a spatial imaginary world responds to a number of motivations, and can be seen in several ways in terms of psychological functions. Although Jean Perdrizet had a passion for science from an early age, and read widely, taking notes, drawing, copying and soon inventing, it was only once he became an assistant engineer that he began to draw precise plans in black ink at his drawing table, first professionally in various jobs, then personally, with drawings sometimes reaching ten meters in length, which then became partly delirious and utopian from the 1940s onwards.

His work primarily reflects an insatiable curiosity for science, which blends with his family's other interests, in particular spiritualism and religion. For Jean Perdrizet, the tensions between science and spiritualism are a driving force behind the creation of his space myths, in the same way as Claude Lévi-Straus envisages the creation of mythical thought, one of whose functions is also to clear up ambiguities in social representations. In these creative processes, Jean Perdrizet projects his desires, fears and spiritualist beliefs into space in a manner compatible with the reality represented by technological advances in the conquest of space and by the theories of physics, to silence the ambiguity of the apparent uselessness of his productions, of his own existence and that of the eventual disappearance of all things.

Jean Perdrizet's drawings enable him to resolve his ambiguities, and blur his doubts by making him the engineer he will never be in reality, by constructing a spatial imaginary world in the form of a mythological creation of a soul immortality project of

³⁵ *Transfictionality* is the practice of disseminating and sharing fictional elements in various literary works. On this subject, see Megan Bédart, *Mécanisme de reproduction extra-terrestre – Étude des dynamiques d'expansion transmédiatique et transfictionnelle de la franchise Alien*, Master's thesis in literary studies, Université de Montréal, Québec, October 2017, p. 11, p. 35-36.

³⁶ Science fiction thus appears as an inverted memory of humanity projected into the future, while myths are the oldest and still often mysterious version. This association of past and future memories is part of an anthropology of memory whose foundations are general and partly biological. See Eugène Michel, "De la mémoire mythologique à l'imaginaire de motivation", *Psychologie, éducation et enseignement spécialisé*, February 2023. Online at http://dcalin.fr/publications/eugene_michel70.

which he is the creator. In this way, Jean Perdrizet constructs an *alter ego* for himself, in the figure of a redemptive space engineer and Savior of humanity; this is how he can present himself to others as an "inventor", an "equipment assistant on long leave", or as a "technical assistant from the *Ponts et Chaussées* which [own] air bases [sic]".

In addition to his large-scale plans, Jean Perdrizet also built models for public demonstrations (Fig. 3), running on compressed air or pressurized water, with technical assistance from former colleagues at the *Ponts et Chaussées*. Although no one was really fooled by his genius – neighbors, friends, visiting scientists from Marseille or journalists – they all tried to maintain relations and a minimum of correspondence with him. Perdrizet wrote ceaselessly to publicize his inventions, sending reproductions of his plans and even to the American heroes of the conquest of space, Siegfried Fred Singer (1924-2020) and Wernher von Braun (1912-1977), and more widely to institutions such as Toulouse's Aérospatiale or NASA, or even to the great figures of cybernetics such as Norbert Wiener, who archived the correspondence received from Perdrizet in his personal papers³⁷.

Jean Perdrizet's productions and the acts of his life thus make an *œuvre* in the sense that they create his personal figure of a space engineer, which appears as the essential function of his spatial imaginary world. There is no doubt that this practice constitutes a psychological refuge in its outcome, but perhaps also more interestingly a active intelligent and performative way of creating this refuge by using among the most complex of human psychological functions – imagination – to live better by partly extinguishing his anxieties³⁸.

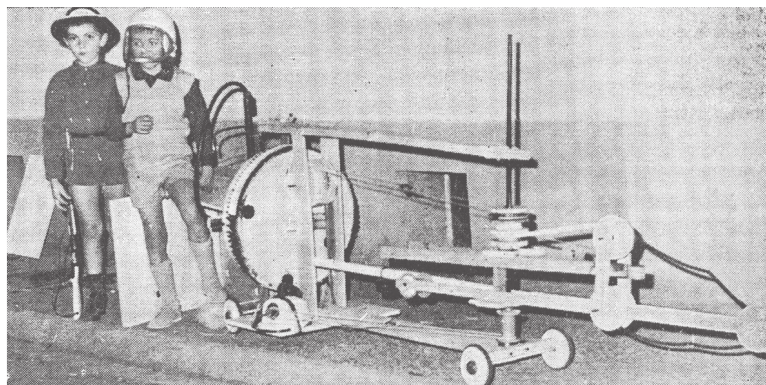


Figure 3 – 1969 press photograph of Jean's spacecraft model, *Le Méridional*, October 24, 1969, "Les prochains voyageurs pour la Lune seront peut-être dignois? [sic]". Musée Gassendi collection, with permission.

³⁷ See Pierre Cassou-Noguès, "Vaucanson androïde": Jean Perdrizet, la cybernétique et le spiritisme", in I. Moindrot and S. Shin (eds.), *Transhumanités*, Paris, L'Harmattan, 2013.

³⁸ This is the theme of "narrative psychology". See: "De l'intérêt de faire de sa vie un roman", *Courrier international*, February 12, 2023. This field would benefit from an interest in *art brut*, in which the creator constructs his or her *Alter ego* as a necessity of life, through a founding creation of a fictional nature. This field could also interpret the construction of ancient myths and those of science fiction as collective psychological necessities.

This fiction of a space engineer is therefore an individual myth, responding to a demand for stability that motivates the creation of what we call a "performative imaginary world" that this space imaginary world represents. Jean Perdrizet is so consubstantially dependent on this myth that we can identify its author without hesitation as an isolated creator of *art brut* building his *Alter ego*. To stay on his feet, Jean Perdrizet always had to have faith in his work, and over the decades, he was pleased to see that the main directions of his projects took shape in the space race, with the creation of autonomous spacecraft, such as those sent to the moon, or in the development of artificial intelligence.

Jean Perdrizet can be placed in a group of *Art Brut* creators more generally inspired by the conquest of the sky by flying machines and automatic mobile devices, such as Charles Dellschau (1830-1923) or Lee Cordova Spooner (1863-1955). More specifically, we find the theme of space developed in the form of graphic cosmogonies taking the form of imaginary planetary systems, as with Pedro Cornas, or in a context of futuristic science tinged with pseudo-science, as with Alexander Medvedev and J. Perdrizet³⁹.

Jean Perdrizet's performative imaginary world is in fact a double myth of origin, a personal myth and the myth of a new, eternal, communicating humanity, which reminds us that we all live in the world we want to see, and that we participate in constructing through our own beliefs. Today, the mythical construction of space imaginations is based on science, science fiction and other personal beliefs. In the 1960s and 1970s, Perdrizet's work was itself influenced by this literary genre, which at the time was not free from complotism in its elaboration by authors concerned with the lucrative nature of their activities, notably science fiction. But if Jean Perdrizet didn't have much choice in taking such material from popularized science to exist in his own way, today mythical thought and creation, if they can never be totally excluded from any non-scientific questioning and figuration of space, must more than ever be based on serious sources. For far from illuminating the shadowy areas of myths by gradually extinguishing them, science brings new hopes and new possibilities for all those who are attentive to the countless possibilities for dreaming offered more than ever by the modern exploration of space.

Acknowledgements. The author thanks the anonymous reviewer for his helpful comments and Chantal Barbara for her proofreading. This project was partly funded during 2012-2015 by the *Institut des humanités*, Université Paris Diderot and the Labex Arts H2H of Université Paris 8, as part of the research program of Jean-Gaël Barbara and Pierre Cassou-Noguès.

³⁹ See J.G. Barbara, article *Creators – Inventors*.

TABLE 1
JEAN PERDRIZET'S MAIN DRAWINGS, CORRESPONDENCE AND EXHIBITIONS.

SEE J.G. BARBARA, 2021, FOR A LONGER LIST

Archives	Archives nationales Fonds Jacques Paillard	Musée Gassendi Digne-les-bains	Musée LaM Lille métropole
Examples of drawings	<ul style="list-style-type: none"> - « La pensée électrique » (1936 et 1962) - « Vision cybernétique des formes » 35,5 × 64 cm (1949) - « Langue des robots astronautes sidérale – Esperanto sidéral – Prospectus – Esperanto logistique instantané » (1949) - « Exploration visuelle mixte » 37,7 × 65 cm (1954) - « Esperanto cybernétique – Esperanto 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 – sidéral 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 » 	<ul style="list-style-type: none"> - « Radio-ame [sic] » 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 	<ul style="list-style-type: none"> - « 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) - « Rétrofusées 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

	<p>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 imaginaire » 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).</p>	<p>dans la nature » 33 × 65 cm (1956) – « Ancre de l'âme [sic] – 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) – « 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</p>	<p>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) – Coupure de presse annotée « L'inventeur digne 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)</p>
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	<ul style="list-style-type: none"> – « 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). 	<ul style="list-style-type: none"> liquides » 21 × 27,4 cm (années 1960) – « Table traçante périphérique d'ordinateur imaginaire » 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) 	
Correspondance		Correspondance entre le mathématicien José Argémi, Jean Perdrizet et Adrien Dax, artiste surréaliste.	Correspondance du docteur Jacques Caïn à Christophe Boulanger.
Some exhibits	<p>Exposition à la galerie Christian Berst jean perdrizet deus ex machina des œuvres de Perdrizet, 3 février 2012 – 10 mars 2012.</p> <p>Exposition When the Curtain Never Comes Down, Valérie Rousseau, commissaire, du 26 mars 2015 au 5 juillet 2015 à l'American Folk Art Museum, New York.</p>		

Author's version of : J.G. Barbara, 2024. L'Imaginaire spatial": constitution, essence et fonctions dans l'œuvre de Jean Perdrizet (1904-1975), *Sociétés & Représentations*, Elsa De Smet, Laurence Guignard, Laurent Martin (Dir.), dossier *L'Aventure spatiale*, forthcoming 2024.

	<p>7. Catalogue de Valérie Rousseau (dir.), <i>When the Curtain Never Comes Down: Performance Art and the Alter Ego</i>, in <i>When the Curtain Never Comes Down: Performance Art and the Alter Ego</i>, New York, American Folk Art Museum, 2015.</p> <p>Exposition de nouveaux dessins de Jean Perdrizet, galerie C. Berst, jean perdrizet, <i>deus ex machina #2</i>, catalogue chez Christian Berst Art Brut, Paris, Klein & Berst, 2018.</p>
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