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DOCUMENT IN THE HISTORY OF SCIENCE FICTION

Maurice Renard

On the Scientific-Marvellous Novel and Its Influence on the Understanding of Progress

Edited and translated by Arthur B. Evans

*(This essay was first published in Paris in the French journal *Le Spectateur* in October 1909. Except for the marked ellipsis of a few obiter dicta, the following version is complete.)*

The scientific-marvellous novel touches on a number of philosophical questions. And the readers of *The Spectator* will find, upon examining it, a most efficient application of *experimental logic* as well as an exemplary demonstration of the latter's necessity and value. It therefore did not seem out of place for me to discuss the scientific-marvellous novel in these pages. I do apologize, however, for not being able to do so in a wholly acceptable fashion—i.e., by restricting my comments on it to only those aspects which fit the journal's primary interests and by leaving aside those more literary-oriented observations which would, if discussed abstractly, only serve to cloud the issue. If it isn't premature to discuss things at the moment when they have just come into existence, the scientific-marvellous novel is now ripe for critical study. The present times permit us to define it. The inevitable product of an era where science dominates but does not extinguish our eternal need for fantasy, it is indeed a new genre which has just come into its own. *The Island of Dr Moreau* of Wells and Derennes' *The People of the Pole*, for example, furnish us with two rather typical examples (Dr Moreau being a surgeon who creates humans from animals, and the people of the Pole being a tribe of intelligent and civilized beings, evolved from the same antediluvian origins as ourselves but who have remained saurian whereas we became mammalian).

I say a *new* genre. Until Wells, one might well have doubted it. Before the author of *The War of the Worlds*, those rare portrayers of what would later be called the "scientific-marvellous" did so only from afar, on occasion, and (it seems) as a game. Cyrano de Bergerac made it a kind of stepping-stone to his utopias; Swift used it as a means to construct his satires; more recently, Flammarion took advantage of it to concretize certain metaphysical notions which might have been too abstract for the average reader to grasp otherwise; Edmond About took it and turned it toward comedy and, in doing so, created an early parody of this future genre (compare, for example, his *The Notary's Nose* with *The Island of Dr Moreau*). In fact, this long succession of mixed and eclectic literary productions is far from finished: utopists who "need a

world” see in the scientific-marvellous a kind of estrangement [*dépaysement*] too precious to abandon, and satirists will never give up such a resource which provides them with so many possibilities for allegory and allusion.

It was Edgar [sic] Poe who, in his two stories *The Facts in the Case of M. Valdemar* and *A Tale of the Ragged Mountains*, was the true founder of the pure scientific-marvellous novel, in the same way as he invented the detective novel with three other prototypical short stories. But the former were so complete and synthesizing, so absolutely definitive, that he engendered only imitators and no true disciples during his time. For stories of the scientific-marvellous, he did have some famous descendants in Villiers de l'Isle-Adam who wrote *The Future Eve*, in Stevenson with *Doctor Jeckyll [sic] and Mr. Hyde*, and then finally in H.G. Wells.

With Wells, the genre began to flourish in all its full amplitude. With him, the scientific-marvellous (as some have come to designate it) was consecrated and given life, as in a baptism.

Let there be no mistake. If the mastery of Wells in imagining and in fleshing out the themes of the scientific-marvellous constituted the real glory of this English writer, not all his works are necessarily variants of it. I count only five novels and a few short stories as such.¹ Without mentioning the socialist prophecies of certain works, there are many writings by Wells which do not belong to this rubric—wherein the scientific-marvellous is only a pretext for philosophizing, a secondary factor in the plot, like in *The Food of the Gods*. (It is not the case, I hasten to add, that Wells totally avoids satire or philosophy in these selected five novels and short stories. On the contrary. But the lessons that he gives us through them seem to emanate so naturally from the scientific-marvellous narrative itself that he has no need to express them as such. From the beginning to the end of these novels, he portrays the extraordinary without the benefit of undue digressions or implied meanings. Example: the formidable fable of *The Island of Dr Moreau*.) There are also other works—quite unusual, moreover, and which make of Wells a true innovator—where it is no longer a question of science but, rather, of logic alone (considered not as science but as a mental capacity) which somehow becomes imbued with the marvellous. I set these aside as well, and I propose to apply to them the label of *logical-marvellous* (example: “The Wonderful Visit”), reserving the term *scientific-marvellous* for those tales which present us with an adventure of science pushed all the way to the marvellous, or the marvellous envisaged scientifically.²

So here is a definition, as vague as it might be, but one with which we must content ourselves until such a time as another, more precise definition someday emerges from some deeper examination.

How does one generate a scientific-marvellous novel? Where do its subjects come from and how are they treated? What is the technique of this new art-form? It is fascinating to analyze, work by work, the entire literary production of the authors heretofore cited—to scrutinize the particular scientific disciplines which molded their fantasies, from the initial principles used to the subsequent elaborations—and to distill the laws of a general

methodology. It's hard work, and most novelistic genres would be resistant to it. Ours, however, comes out of this inquiry triumphantly. Such a dissection shows us that the scientific-marvellous novel is built on a powerful skeletal frame that is reason itself; it shows us that the organism is constructed from a fabric made of knowledge and ingenuity. In fact, it is the contemporary literary genre which is most akin to philosophy—it is philosophy put into fiction, it is logic dramatized. Born of science and reasoning, it attempts to foreground one with the aid of the other. And it stands before us, with its noble pedagogical and moral tendencies, its mediate and immediate educating effects, as one of the most wonderful creations of the human spirit, a great work of art which (by a kind of optical illusion) seems small only to those who are distant from it and seems childish only to those of juvenile intellect.

It is impossible to analyze here each author and every novel. I will attempt, however, to indicate some general principles which such an analysis might yield, and which, considered all together, would almost constitute a “how-to” manual for authors of the scientific-marvellous (a rather ridiculous notion, I must admit). I say “almost”—were it not for the necessity, in order to become a true emulator of Poe, of having that luck or instinct which tends to modify one's thoughts in the midst of one's quest for where the treasure is buried, inside that labyrinth where only Logic can guide, saying “It's there.”

If we consider the universe as divided into three parts corresponding to the classical idea of the three degrees of understanding, then there are three kinds of things: those that we don't know, those that we suspect, and those that we know. The first two categories—the scope of which is diminishing as our science develops, but which will doubtlessly always exist because we will never know everything, and which *seems* to always be growing because the effect of science is to instruct us on the nature of things while revealing to us new questions which it cannot answer—these first two categories constitute the domain of the scientific-marvellous. It is there, from the world of the unknown or the suspected, that the scientific-marvellous must draw the material for its diverse creations, not from the world of the known and the certain. Science is, moreover, incapable of showing us anything marvellous, in the true sense of the word. It is, in fact, the great killer of the miraculous. There is marvellous only in mystery, in the unexplained. All marvels cease to exist at the moment when we understand their true causes and their true nature, as soon as they pass from the realm of the unknown or of doubt into that of science.

We are, accordingly, obliged to search for our novelistic themes either in the unknown or the uncertain. But, since it's a question of the *scientific-marvellous*, how are we able to reconcile these two demands—in appearance so contradictory—that we take our subjects simultaneously from science and from what is not science? We must act exactly like a scientist who seeks to solve a problem: we apply to the unknown or the uncertain the principles of scientific method. But if so, how are our imaginary solutions different from the real solutions of science? In other words, since we are fully aware that we are not making real scientific discoveries, what distinguishes the reasoning

used for the scientific-marvellous from that used by real scientists? It is the voluntary introduction into the series of propositions of one or more abnormal elements which are fashioned in such a way as to render a being, object, or event *marvellous*. (*Marvellous*, that is to say, what appears *currently* to be marvellous. The future may demonstrate that the element which was supposedly abnormal was, in fact, not so at all, and our scientific-marvellous was purely and simply science—as involuntary as Monsieur Jourdain's prose. The advance of knowledge may demonstrate that our irrational speculation was, in fact, not so at all—but at the moment when we write it, it is. Let us nonetheless note in passing that a fictional text's propensity for generating passionate interest and a sometimes disturbing verisimilitude is in direct proportion to the small number of abnormal elements that we put into it. The fewer the falsehoods, the more the logic—something which imparts to the work its strong texture of truth. Therefore, most scientific-marvellous novels restrict themselves to falsifying no more than one natural law, and to showing us the effects of this single modification where all the other laws remain unchanged.)

This general procedure used to construct the framework of a scientific-marvellous story can assume an infinite variety of forms. Examples: we can accept as viable certain scientific hypotheses and then deduce the direct consequences of them (e.g., life on Mars accepted as obvious, combined with what long study of this planet has taught or suggested to us, and we have Wells' *War of the Worlds*). We can substitute one idea for another, give to one the properties of the other, a trick which will permit us to apply to it a system of investigation which would be in reality quite impractical, but which might help us to find the solution to a problem by supposing it already solved (e.g., give the qualities of space to time, and we have *The Time Machine*). We can apply methods of scientific exploration to imaginary objects, beings, or phenomena through rational analogy and logical assumptions (e.g., suppose an empirical study of extraterrestrials, and we have [Derennes'] *The People of the Pole*). It's all about *extending science fully into the unknown*, and not simply imagining that science has finally accomplished such and such a feat currently in the process of coming to be. It's all about, for example, having the idea of a time machine to explore time, and not about a fictional protagonist who has managed to construct a submarine at a time when real engineers are hot on the trail of such an invention. And I strongly assert that this, in essence, is what differentiates Wells from Jules Verne—two writers so frequently lumped together. Jules Verne never wrote a single sentence of scientific-marvellous. In his time, science was pregnant with many impending discoveries; Verne simply supposed them already born before they actually were. He only barely extrapolated on discoveries that were already on their way to seeing the light of day. At the most, there was usually only one unknown element in his narratives. And since we're on the topic, a deeper distinction should be made between Wells and Robida. The latter, in his celebrated *Twentieth Century*, did nothing but envision the fulfillment of a few of our least important and most superfluous wishes—without bothering either to portray the results coherently or to draw conclusions from them.

Such is, then, the elemental structure of all works of the scientific-marvellous whatever their literary form might be: whether they seem to be the theatrical portrayal of a paradox or the active paraphrase of a metaphor. And if we push our analysis even further, this voyage from the known into the unknown—this perpetual oscillation between science and ignorance so rapidly accomplished as to make these two opposites sometimes seem melded into one indeterminate supernatural—takes the form most often of a syllogism in which one of its premises is purposely false. A scientific-marvellous novel is always based on a sophism;³ and, most of the time, one single sophism placed at the beginning of the work—one deviation from the norm—is sufficient to preserve its double character of marvellous and scientific, without the author introducing into his work any additional falsehoods. Often the tightest mathematical demonstration is susceptible to being adapted to a long series of facts which proceed very logically from one to the next, all the while getting further and further away from its initial point of truth (where the intentional falsehood was placed). Ah! What a study it would make to analyze this shadowy realm between the world of certainty and the world of conjecture, and the various stratagems that writers use to dissimulate it! Nothing is more specious than their ruses which try to mask the introduction of this equivocating idea which, on the basis of its apparent axiomatic (albeit false) evidence, creates such stunning postulations! Nothing is more fascinating than the patient skill they use to skew a chain of reasoning or to change a preconception with these tiny and almost imperceptible doses of what appear to be common sense—but a common sense that has been duped. But we nonetheless find a certain pleasure in allowing ourselves to be duped by these tricks, and we accept them willingly because of the overall value of the end-product itself.

It would be redundant to state that the scientific-marvellous novel has a salutary effect when it contains the demonstration of a social theory, however utopian, or when it consists of a satire. These kinds of works always tend to have moralizing or reformist intentions that are obvious, and therefore have immediate salubrious effects. But one can also say that the scientific-marvellous novel is highly pedagogical: a fictional work of this sort often contains an entire course in paleontology, or in optics, or in chemistry, or in surgery, etc. And these lessons are not wholly superficial, because the author often goes beyond the basics of the science itself to its very metaphysical core—a question too often neglected.

Another benefit: I have observed among many people a kind of meditative wonderment when they have finished reading a scientific-marvellous novel. I have asked them what they attribute this to (having often asked myself the same question), and I am now convinced of the following: after reading a work like *The Invisible Man* or “In the Abyss,” we no longer see things in the same way. Analyzing this change in perception, I have come to the conclusion that it is due to the influence of the scientific-marvellous novel on our understanding of progress.

By the word “progress,” I mean the public's idea of progress. What is it? What concept of progress do the majority of people have? Putting aside all

notions of political or moral progress—which gets rid of a host of wide-ranging opinions on questions which most people don't even think about, and which has nothing to do with the concept at hand—I believe that the most popular understanding of the word “progress” is *the whole of human acquisitions considered at a given moment in comparison to another moment*. This definition is sufficiently broad to satisfy most people, and it seems to express quite well the first idea that pops into the mind of someone when the word “progress” is mentioned: the continual enrichment of human knowledge.

But how does humanity become conscious of progress? By its concrete materialization, by those practical manifestations which are the only criteria and the only possible measure of it that are normally perceptible. Progress, to the general public, is thus an essentially utilitarian notion. The public demands that science make discoveries that are applicable. All those branches of science which have sufficiently “produced” are viewed as being adequately developed: there is no need to pursue them further. In contrast, those which do not appear to produce an increase in our well-being or in our power over nature seem superfluous to us, and we tend to make fun of them—as we sometimes do of poetry—even though it was not so long ago that astronomy itself was nothing more than the leisure musings of dreamers.

In effect, we have few ambitions: we desire only discoveries that will either decrease any danger to our material well-being or increase our physical or psychological comfort. Such inventions will therefore either abolish an evil or produce a good; in this sense, some—like the elimination of a disease—are essentially negative; others—like the telegraph—are positive. Anything that is capable of intensifying our actions or extending our influence over time and space, and anything that removes obstacles to this process, are thought of in the public mind as “progress.”

For example, a “philanthropist to all humanity” might be an ingenious chemist who finds a cure for a disease that is widely reputed to be incurable. But the real hero—the divine creator, the true descendant of the God of Genesis—is the engineer who manages to enhance our bodies either by amplifying our strength or by extending our powers of perception....

The creation of the first handax was the first discovery to mark “progress” in the eyes of primitive Man because, with its flint head, it made one's punch deadlier and gave one's arm a longer reach. The successive improvements of the sling, the bow, the crossbow, the musket, and the modern rifle are all steps in the same progression, throughout which our punches have become more and more deadly and our arm's reach longer and longer. Man has seen his dreams fulfilled and his fairytales become reality; climbing into a car is like stepping into the shoes of a fleet-footed sylph, firing a cannon is like putting on a grey glove that can touch things miles away.

In addition to these devices that extend our muscular abilities, we also consider as manifestations of progress those which correct the imperfections of our senses and are, thus, to our sense organs what a prosthesis might be to our appendages: the microscope which enhances our micro-vision; the telescope and the telephone which powerfully amplify our macro-vision and

our hearing over great distances; the phonograph which preserves sounds for us over time and in our absence; the cinematograph which is a machine that can visually explore the past; and those many other famous discoveries which provide us with the eyes or ears of Titans.

Among other such dynamic improvements, humans have always desired legs that were immeasurably long: the rapidity of movement and transport has always been very important to us. Now, finally, with the advent of flight, we appear to have reached the apogee of progress because it opens a whole new era in human locomotion.

A new era—perhaps even more than we might have guessed. All those positive discoveries prior to this one have developed in us certain ancient powers that our ancestors have possessed since the dawn of time: they serve to improve on those capacities that we have always had and that we share with various animals. To use a telescope is to see *farther*, to see *very* far; these are but the comparative and superlative of the verb *to see*—to see even better than an eagle whose vision is already better than our own. To submerge beneath the waves in a submarine, in a diving suit, or even totally naked is still diving, like our ancestors did ages ago. And to sprint along in a 100 horsepower vehicle, this is still sprinting—albeit much faster than the pithecanthrope along the paths of the Pliocene forest floor. A great many of our most-admired modern machines are simple refinements of swimming or walking.

In contrast, the possibility of aerial navigation adds an entirely new dimension: an access to something for which we have no natural capacity—our arms are able to become fins but not wings. And it makes us masters of the previously untouched immensity of the skies, something we have dreamed of for millenia.... It makes us sovereigns of a realm vaster than the surface of the Earth—a realm so pure and azure, so forbidden yet so *promised*, that even the ancient myths sang of the presence of mortals therein (it was there we put our gods and our heavens) and we even put wings on our angels and portrayed the pharaohs of Egypt beneath the wings of a swan or an ibis. Give us wings! We have uttered this cry for centuries upon centuries, so much so that it has become a cliché. Aviation has finally given us wings and has made us equal to the birds, the only animals in creation who remained somehow superior to us. It thus symbolizes the epitome of *progress*.... [This is how] the general public goes about defining such a notion.

Of course, the longer and more fervently something has been desired, the more its eventual materialization seems to qualify as progress. Inversely, certain important discoveries—like those of X-rays or radium, whose need was not felt and whose immediate practical applicability was not obvious—seemed less so, despite the astonishment they might generate. Roentgen and Curie did not enjoy the instantaneous and widespread public acclaim of the Wright Brothers or of Blériot.

Thus, we have become accustomed to considering science as something which is obedient to our wants and desires. We believe that it develops and grows in order to better satisfy our human appetites—given the space and conditions that humans have lived in since prehistory—and we admire science

only for that. For if the Earth is no longer the center of the universe, Man is nevertheless still riveted to its surface, and each of us wishes to believe that we are still at the center of things.

The influence of the scientific-marvellous novel on such a concept of progress is considerable. Being forcefully convincing by its very rationality, it brutally unveils for us all that the unknown and the uncertain perhaps hold in store for us: all those wonderful or horrible things that might emerge from the depths of the unexplainable, all that science is able to discover by extending itself beyond those many inventions which seem to mark its end, all those unforeseen yet possible byproducts of such inventions, and all those new sciences which might develop to study such unsuspected phenomena.... It portrays our daily, humdrum lives shaken up by various cataclysms of the most natural yet unexpected sort. It reveals to us, in a new and startling light, the instability of everyday occurrences and the omnipresent threat of the possible. It causes us to feel the uncomfortable queasiness of doubt and, with frightening intensity, the horror of the unknown. It opens up for us an immeasurable space outside of our immediate sense of well-being; it removes from our ideas about science all notions of domestic applicability or sentimental anthropomorphism. It fragments our habitual lifestyle and transports us to other points of view outside of ourselves.

Although we intuitively know that the eventualities which truly threaten us are probably not the same ones we are reading about, we nevertheless feel that very similar surprises are probably awaiting us or our children at some point in the future—events that will confront mankind with catastrophes or miracles very analogous to those described in such novels. We feel it and we know it *by experience* because the current creations of science would seem miraculous and impossible to our ancestors, because recent and unexpected discoveries like X-rays and radium have not been any less awe-inspiring to us than the one described in Wells's "The New Accelerator."

But I will not insist further on the many questions raised by the birth of the scientific-marvellous novel. The above summary should be sufficient; I do not wish to lengthen such a discussion into unnecessary redundancy when no additional clarity of the question might be gained from it.

On the other hand, the preceding observations about this new literary genre seem to contain all the ingredients necessary for its definition. And I will end this essay by attempting to provide one. I don't believe that one could better serve the cause of Wells and his disciples, nor generate more attention to and respect for their works within the public's mind, than by saying: "The scientific-marvellous novel is a kind of fiction which has at its base a sophism, the object of which is to transport the reader to a new and more accurate understanding of the universe, and the methodology of which is the application of scientific method to the comprehensive study of the unknown and the uncertain." (Oct. 6, 1909)

NOTES

1. Five novels of this type: *The War of the Worlds*, *The Island of Dr Moreau*, *The First Men in the Moon*, *The Invisible Man*, and *The Time Machine*. A few short stories:

“In the Abyss,” “The New Accelerator,” “The Stolen Body,” “The Truth About Pyecraft,” etc.

2. It should be noted, moreover, that the scientific-marvellous novel—although it was born earlier—is only a modality of the logical-marvellous, and not a genre that is distinct from it.

3. The sophism is not always where the reader thinks it is. It is not always, for example, in an apparently extraordinary phenomenon, but sometimes in the methodology used to portray it. Such is the case in Wells' “The New Accelerator” where the invention has the effect of speeding up the life-functions of the protagonist—to a point where everything around him seems to slow down. Here it is only a case of transferring into a fiction what occurs naturally during critical circumstances, during a dangerous moment, during an accident. Everyone is aware of how time seems to slow down during a perilous fall or an automobile accident. The sophism of “The New Accelerator” is the fictional invention of certain pharmaceutical procedures which artificially recreate this accelerated state—not in the state itself, as one might be tempted to believe.