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Editorial

A Journey Through Time: Historical and Future Perspectives in Orthopaedics and Artificial Intelligence (AI)

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Editorial

Let's go back in time; let's travel to the past. I hope the loop allows us to return to the present. Will you join me?

At the end of the 19th century, Roentgen, in the dark shadows of his basement and with the curiosity that fuels the scientific method, discovered X-rays: A chance occurrence. At that time, doubts were being clarified and the inflammatory process was better understood, as well as what was the cause of the chain of events that led to many deaths in the ward (pathogenic germs invisible to the human eye). The emergence of Dr. Harold Gilles in the second decade of the 20th century marked the beginning of modern plastic surgery. The transformation of a wound. When everything was darkness and uncertainty, the New Zealand doctor, a keen observer, interacted with other specialties and innovated reconstructive techniques. He not only sutured flesh but also transformed the future outcome of the wound. Around that time (1918), Dr. Kenji Takagi also invented arthroscopy. He was the first person in history to visualize the inside of a human cadaver´s knee. Without his invention, perhaps I would not be certified in knee traumatology and other subspecialties [1].

There is always a nebulous element at the beginning of any scientific discovery. Now, in the digital age, Artificial Intelligence tools are able to delve into any murky cloud. They have been trained to freely associate millions of words in a second, including phrases and texts from both the past and present. Humans cannot; neither with the speed nor the volume that a machine processes (nor do I think all the Martians combined, or the Hungarian geniuses John von Neumann, Eugene Wigner, Leó Szilárd and others, could have). The human gift, in essence, lies in the ability to learn, use analogies and activate hierarchical memory. All these skills led to pioneering inventions: the invention of the wheel, spokes, the use of flaps and vaccines. Undoubtedly, in its historical review, the cost and collateral effects of an inevitable phase of trial and error must be considered. Indeed, X-ray exposure had to be improved to prevent the radioactive damage that affected so many [2]. Asepsis had to be integrated with other sciences, such as microbiology, in order to prevent further deaths. Dr. Gilles' initial flap procedure failed and in my experience as a specialist in the digital age, after reviewing hundreds of studies, attempts to replace the entire meniscus have failed [3,4]. The current approach is to preserve, to the greatest extent possible, a portion (or a large portion) of the body of the meniscus to prevent future osteoarthritis. Meniscal grafts from cadavers have also been used, with moderate expectations, limited to and contingent on the high cost involved. Search engines and news algorithms also inform us of the advances in organic cartilage replacement [5].

And now, we return to the present.

It would be wonderful to be able to rewrite history like someone revising a draft of a great novel. The writer and reader would only see the single, final version. No trial and error. No side effects, no half-finished work. Moving from darkness to light. To do that, one would first have to travel to the past to reverse the effect-go to the heart of the chain of cause and effect and redo it [3].

This is simply not possible, since in the physical dimension we humans inhabit, what occurs on a computer screen does not happen with cellular automatons (advancement and reversibility). An effect generates consequences; it creates a tangible reality that takes root through time [6-9].

It is true that many things can be reversed: fever, for example. Also, inflammation and sepsis and why not kidney damage. A blood test in an adult patient can, at some point, return to the same healthy levels they had when they were younger. A trip through time, To the past, is it not?

The topic of time travel began to take shape over 300 years ago, when Newton stated that time was independent of everything else. Subsequent discoveries along the same lines added improvements, even to Einstein's theory of relativity. These advances revealed that time and space, besides being curved, do not exist independently of the universe and that time - space includes not only "objects" but also energy and particles (the beginnings of quantum mechanics). Bohr, Heisenberg, Max Planck all improved Newtonian physics (and Einstein's relativity) to the dawn of this day, where technology and AI are on the verge of achieving a miracle. A prodigy that could materialize on one basis: curved time – space could be so very distorted that a (limited) time loop could occur, allowing one to start and return before taking off or beginning. In other words, a journey to the past in an instant-time travel!

The topic was revived by scientist Stephen Hawking in the current millennium, but it had already begun in 1949 with mathematician Kurt Gödel and his theory of rotating universes [7,10]. He wrote an article at the urging of his friend Albert Einstein. Gödel asserted that it was theoretically possible to travel to any realm, whether past or present and return!

The topic is deeply troubling and quickens the heartbeat and although it tends, admittedly, to be purely theoretical, it also has intricacies that could lead to speculative realism.

Will AI make it a reality someday, catalyzed by quantum physics? The truth is that, today, Artificial Intelligence is currently becoming firmly and deeply rooted, akin to a tree.

In my specialty, traumatology, advances in DCNN (Deep Convolutional Neural Networks) have shown potential to improve the diagnosis of meniscal tears. There are AI models capable of accurately detecting meniscal tears by analyzing MRI images, with pooled sensitivity and specificity rates. The generation of images is now very advanced. This will facilitate predictive models that are specific for each patient, marking a paradigm shift towards personalized medicine. Perhaps there is already software, with the voice and hologram of Dr. Kenji Takagi, to tell us what we have forgotten, the missing ingredient to replace the meniscus [6].

However, the aim is to highlight the good, the unique and the brilliant aspects of past history. A story of courage, understanding and willpower in the face of adversity. Had we not had those visions of the future (in the past), we would have taken two or three times as long to achieve everything, with a longer period of collateral damage and trial and error. It remains to be seen what “the future” holds for brilliant ideas such as the manipulation of the genetic code. We need to see where quantum determinism will lead us in the inevitable convergence of AI and synthetic biology.

Moreover, I believe that a time loop can be something simple. A forgotten memory of an aspiring medical specialist, something the person saw and studied in their first year but had not integrated; and that fusion triggered a spark, a study, a possible creation.

The literature on AI claims that it can completely change existence, even the rules. And what would happen if an enhanced consciousness were connected to a computer? A mega-milestone, perhaps?
A consciousness of someone ahead of their time with instant access to the latest technology?
As Douglas Hofstadter says in the 1979 book Gödel Escher and Bach. A superlative text.
“There’s always something else after you think you know everything”
The complexities of time travel have stirred a provocative thought in me and in my writing process. Embarking on a journey, a philosophical exercise connecting theoretical physics with advancements and imagination, is a compelling idea and that is how

my editorial should be read: not as pure speculation born of a dislike for entropy (or an analysis of the already entangled speculative realism), but as an exercise in the art of thinking. Thinking and reflecting and ultimately, intertwining ourselves in a loop? [8]. Would the reader care to join me on a journey into the future?

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Authors' Contributions
All authors contributed equally to this paper.

References

1. Suleyman M. La ola que viene: Tecnología, poder y el gran dilema del siglo XXI. London. 2023.
2. Bird K, Sherwin MJ. Oppenheimer: el Prometeo americano. El triunfo y la tragedia de J Robert Oppenheimer. Madrid: Debate. 2023.
3. Labatut B. Maniac. Barcelona: Anagrama. 2023.
4. Fitzharris L. El reconstructor de caras: Harold Gillies. Madrid: Capitán Swing. 2024.
5. García BM, Cugat R. Historia de la artroscopia. Rev Esp Artrosc Cir Artic. 1993.
6. Coppola A, Hing C, Asopa V. Integración de la inteligencia artificial en traumatología y ortopedia. Ortopedia en línea. 2024.
7. Hofstadter DR. Gödel, Escher, Bach: un eterno y grácil bucle. Barcelona: Tusquets. 1979.
8. Zahavi D. Realismo especulativo:¿el final de qué? Fenomenología vs realismo especulativo. Investigaciones Fenomenológicas. 2021;18:208-36.
9. Bunge M. Memorias entre dos mundos. Barcelona: Gedisa. 2014.
10. Hawking S. El universo en una cáscara de nuez. Barcelona: Booket. 2022.