The promise of serendipitous thinking

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I recently viewed a documentary series exploring Italian Renaissance Fresco art. While the photography quality was impeccable, and the selection of Frescos exemplary, I found myself disheartened by the narrow perspectives presented by a renowned contemporary painter. This artist's bias in favour of medieval Fresco art and lesser-known Italian masters led to a dismissive stance against the innovations of Renaissance art. He missed a crucial point – the greatness of Italian Renaissance art lies not in rigid adherence to religious themes but in its profound impact on humanity.

The Italian Renaissance was a movement dedicated to the pursuit of harmony between humanity and nature, nurturing dialogue among a spectrum of disciplines, including philosophy, literature, and the sciences. This intellectual blossoming was further enriched by advancements in fields such as anatomy, geometry, optics, and the chemistry of paints. This interplay between diverse fields and the freedom of intellectual exchanges ignited serendipitous thinking, serving as the cornerstone of Renaissance art achievement.

This phenomenon extends to the realm of science and technology.

I vividly recall an experience from 2008 when one of our research projects faced a serious roadblock. While culturing bone marrow-derived mesenchymal stem cells on the surface of mutant viruses, my student, Gagandeep Kaur, made an unexpected observation. Bone marrow-derived mesenchymal stem cells exhibited upregulated osteogenesis on the negative control – wild-type plant virus-coated surfaces.[1] Our repeating experiments consistently confirmed this curious result. Despite an exhaustive literature search, we could not find any existing theory to explain our findings.

It was during a visit to my dentist for an implantation surgery that serendipity struck. The dentist mentioned the use of mechanically sanded metal screws instead of traditional smooth screws in modern dental implants. Although the exact mechanism was unclear, these rougher screws seemed to integrate more favourably with the surrounding bone and marrow structures, leading to fewer implantation failures.

This "eureka" moment led to a realisation – the osteogenic effects observed on wild-type plant virus-based substrates likely stemmed from the specific topographical features provided by symmetrically organized capsid proteins, rather than specific functional units or binding epitopes as we had previously hypothesised.[2] This serendipitous event catalysed a new hypothesis: nanotopographical cues can significantly influence stem cell fate. Subsequently, our research group published numerous papers, including two in this journal,[3, 4] to validate this hypothesis.

Biomaterials Translational serves as a platform for cross-disciplinary subjects, welcoming comprehensive research and celebrating cutting-edge serendipitous discoveries. In this issue, three review papers,[5-7] a research article,[8] and a viewpoint essay[9] exemplify our commitment to these ideals.

My 3-year tenure as part of the editorial team of this journal has been a rewarding journey, especially as it coincided with the challenging period of the coronavirus disease 2019 (COVID-19) pandemic. I am grateful for the opportunity to collaborate with an exceptionally talented, dedicated, and professional team – Lijuan (Irene) Yang, Jie Yu, and Meng Zhao. As *Biomaterials Translational* transitions to a new editorial team, the journal remains constant in delivering interdisciplinary research in the expansive field of biomaterials science and translational research to you, our esteemed readers.

再见! Thank you for your readership!

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