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Elements: an academic success story, but is its reach far enough?

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I moved to the strategic government and public-facing side of research in taking on the role of Chief Executive of the British Geological Survey at about the time *Elements* was created. It was then that I started thinking that "we as geochemists spend our time talking to geochemists about geochemistry" and I was wondering who else cares about our science?

I guest-edited an *Elements* issue on "The Impact of Geochemistry" in 2015, the summary of which was: As geochemists and mineralogists, we are well aware of the impact of our science. We can often reel off examples of how our discoveries have influenced industry and improved humankind's knowledge about how the Earth works, as well as how natural and anthropogenic processes have led to its present state. Moreover, because of a century of analytical developments and conceptual breakthroughs, geochemists are now versatile and can work across the entire spectrum of the Earth sciences. However, we are not so good at promoting the social and economic impacts of geochemistry.

Are we any better ten years on? I suspect not.

The above-mentioned *Elements* issue had some very relevant reviews that, howerer, made only a limited citation impact. A co-author ramarked "it's OK, it's like reading the *Economist* or another specialised magazine" – it lies on coffee tables and in quiet sitting spaces around the world; it is read but not necessarily cited. Well is it? Yes possibly, by some geochemists, petrologists, and mineralogists, but probably not by government-related officials or patients encountering Elements in their dentists' waiting room! I doubt that Elements has the resources necessary to ensure this sort of circulation.

Given that Elements articles are reviews, they would be invaluable for general circulation, so why not release everything to everyone after 12 months and open all archives to Large Language Models? This would require the Elements board to make a decision on behalf of its writers (and readers), but it could become a leader in our new and rapidly expanding world of artificial intelligence.

I congratulate the magazine and guest editors on the excellent job they have done.