



New Editor-in-Chief Editorial

C. Shawn Green¹

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It's been a little over six years since Dr. Lorenza Colzato, the inaugural Editor-in-Chief for the *Journal of Cognitive Enhancement*, published her journal-opening editorial. The launch of the journal coincided perfectly with a massive increase in scientific research focused on cognitive enhancement. This surge in research was likely driven by a combination of factors, including (A) a significant expansion in our understanding of the basic neurophysiological mechanisms underlying neuroplasticity across the lifespan and how these mechanisms could be specifically targeted or manipulated to enhance learning, (B) a host of clear and compelling translational needs (e.g., in the form of a rapidly aging population in the United States or an improved understanding of the critical links between cognitive function and educational attainment), and (C) a series of seminal empirical results demonstrating that it may, in fact, be possible to broadly enhance human cognitive function and thus that future work in this vein could bear fruit.

As has been seen throughout the history of science though, this surge was then subsequently met by a counterwave of commentaries and critiques arguing that more detailed theory, stronger methodology, and more compelling empirical evidence are needed for field-wide results to be fully persuasive. These challenges have then, over the past few years, been vigorously responded to by the field — with the development of higher precision and deeper theory, larger-scale empirical studies, and significant improvements in the rigor of methods. Thus, there is reason to believe that we are at the start of a new wave of ever-better science focused on cognitive enhancement.

In some ways then, the field's current position is more or less where one might have expected given an extrapolation from our field's trajectory six years ago. Indeed, cycles moving from theoretical and methodological refinement to

empirical research, to criticism and counter-evidence, and finally back to theoretical and methodological refinement are common across the sciences. The increases in knowledge, the refinements in best-practices methodology, and the advances in statistical techniques in the domain of cognitive enhancement that have been seen since the launch of the journal are therefore consistent with a process that “grinds slowly.”

Yet, over the past six years, the world at-large has seen a number of significant events that have already begun, and still continue to produce deflections, discontinuities, and accelerations in the field's trajectory. One such event is the COVID-19 pandemic, where the negative impacts on human life, health, and happiness simply cannot be overstated. Yet, by forcing scientists to adapt their research programs to the demands presented by the pandemic, new avenues for scientific inquiry have been developed that could significantly improve the long-term quality of research in the field of cognitive enhancement. For instance, the surge in the development of methods for testing theories of cognitive enhancement via novel (often virtual) means has the potential to open many new doors (e.g., the increased ease of delivering behavioral cognitive interventions online could broaden the populations that are sampled in empirical work and thus expand the range of individuals that could ultimately benefit from applied work).

A second such event was the murder of George Floyd and the global protests that arose in the aftermath. The mirror that was held up to our society at that time left no ambiguity with regard to the systemic injustices and inequities that permeate nearly all aspects of our world. As such, all people of conscience were explicitly forced to reckon with the systems and processes that serve to propagate these injustices and inequities and ask not just how we could do better, but how we could do what is right. Within the scientific community, thoughtfulness about equity and inclusion in all areas should be the norm. This includes broadening participation and enhancing representation in all aspects of the scientific process, from the scientists that are selected for positions, training, or to be part of decision-making groups to the

✉ C. Shawn Green
cshawn.green@wisc.edu

¹ Department of Psychology, University of Wisconsin-Madison, Madison, WI 53706, USA

participants who are sampled in research studies (i.e., in order to maximize the extent to which the results of research studies generalize across and provide benefits to all groups). It also includes deeply considering issues of potential bias and how to maximize equity (e.g., in the evaluation of scientists; in patterns of authorship, writing, and citing).

I imagine I am not alone in feeling a deep sense of responsibility to do my utmost to make at least some positives come out of these events, even if these positives can never come close to balancing the incalculable losses. And I sincerely hope that the *Journal of Cognitive Enhancement* can contribute, in some way, to those positives.

A Growing Home for All Research Focused on How to Reach Our Cognitive Best

In many ways, I plan to continue the path laid out by Dr. Colzato in order to make the *Journal of Cognitive Enhancement* a home for all research that focuses on how we can reach our cognitive best. This, first and foremost, includes ensuring that the *Journal of Cognitive Enhancement* values all areas of cognition. Indeed, when individuals hear the term, “cognitive enhancement,” their initial tendency may be to imagine the domains of attention, memory, or intelligence; yet, “cognition” also comprises perception and action, comprehension and/or production of language, decision-making, reasoning, and problem-solving, amongst others. Second, it means ensuring that the *Journal of Cognitive Enhancement* values all means of enhancing cognition, from behavioral means (e.g., video games, meditation, mindfulness, working

memory training, and music) to means related to the body or physical health (e.g., aerobic exercise, nutrition/diet, and food supplements), to pharmaceutical means (e.g., neuroenhancing drugs), and to neurophysiological means (e.g., brain stimulation). And finally, it means ensuring that the *Journal of Cognitive Enhancement* values all research questions and associated methodology — whether the questions be related to feasibility, mechanism, efficacy, or effectiveness.

I will also seek to emphasize best scientific practices in the behavioral sciences. This includes not only stressing and implementing open science practices for the journal but actively promoting the sharing of data and research materials whenever possible. I also hope to expand the use of the registered report publication model, as the rise of strongly applied/translational randomized-controlled trials in the field could align reasonably naturally with the registered report model.

As was said by Dr. Colzato in her inaugural editorial: “...this journal has the ambition to lead as a ‘whole’ this new emerging field.” The six years of Dr. Colzato’s leadership absolutely put us on a strong foundation towards doing just that. And so, I look forward to continuing to build the journal and the community around the journal in the years to come.

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