



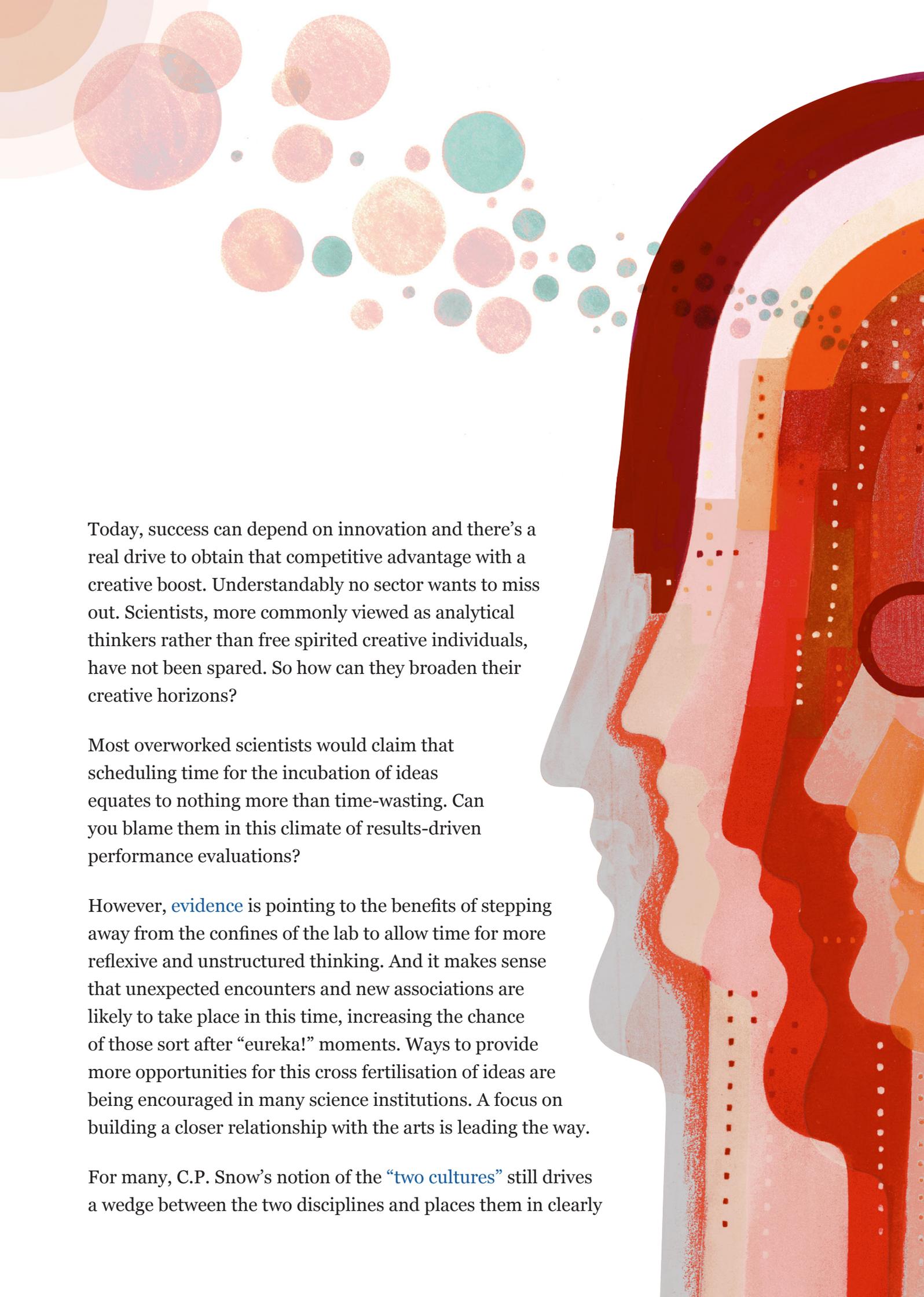
When creativity gets Serious

Thinking outside the lab as a way of broadening scientific perspectives.

Have you ever wondered about that ‘Eureka!’ moment - the miraculous instant when a creative solution to the problem you’ve been grappling with suddenly springs to mind from nowhere? A solution that no amount of focused effort and problem solving would ever have produced.

It can happen anywhere – maybe you’re on your way to get your morning coffee, walking the dog, or waiting in line for the bus. Wherever or whenever it occurs it usually seems to be when you’re *not* working. Or so you think. In fact, your brain *is* working, and doing so in a way that can only occur by stepping away from the task at hand. What happens to your brain during this period of daydreaming that renders useless the many hours spent tackling the same problem in the lab?

This mind-wandering, as Graham Wallas states in his pioneering 1926 book “[The Art of Thought](#)”, is a vital piece of the creativity jigsaw puzzle. He defined four distinct stages of the creative process; preparation, incubation, illumination and verification. Each plays a role in creative thinking. But it’s the second stage, incubation, which takes place when you’re mentally relaxed and nothing is interfering with unconscious problem solving, that’s often overlooked or ‘scheduled’ out of existence in many science institutions. And that’s a worry, as it could be impacting more on just the ever-growing pile of work waiting to be completed.



Today, success can depend on innovation and there's a real drive to obtain that competitive advantage with a creative boost. Understandably no sector wants to miss out. Scientists, more commonly viewed as analytical thinkers rather than free spirited creative individuals, have not been spared. So how can they broaden their creative horizons?

Most overworked scientists would claim that scheduling time for the incubation of ideas equates to nothing more than time-wasting. Can you blame them in this climate of results-driven performance evaluations?

However, [evidence](#) is pointing to the benefits of stepping away from the confines of the lab to allow time for more reflexive and unstructured thinking. And it makes sense that unexpected encounters and new associations are likely to take place in this time, increasing the chance of those sort after “eureka!” moments. Ways to provide more opportunities for this cross fertilisation of ideas are being encouraged in many science institutions. A focus on building a closer relationship with the arts is leading the way.

For many, C.P. Snow's notion of the “[two cultures](#)” still drives a wedge between the two disciplines and places them in clearly



defined territories where exchange can be fraught. Creativity, however, thrives where boundaries are pushed. So what does it take for scientists to broaden their creative horizons within this new framework?

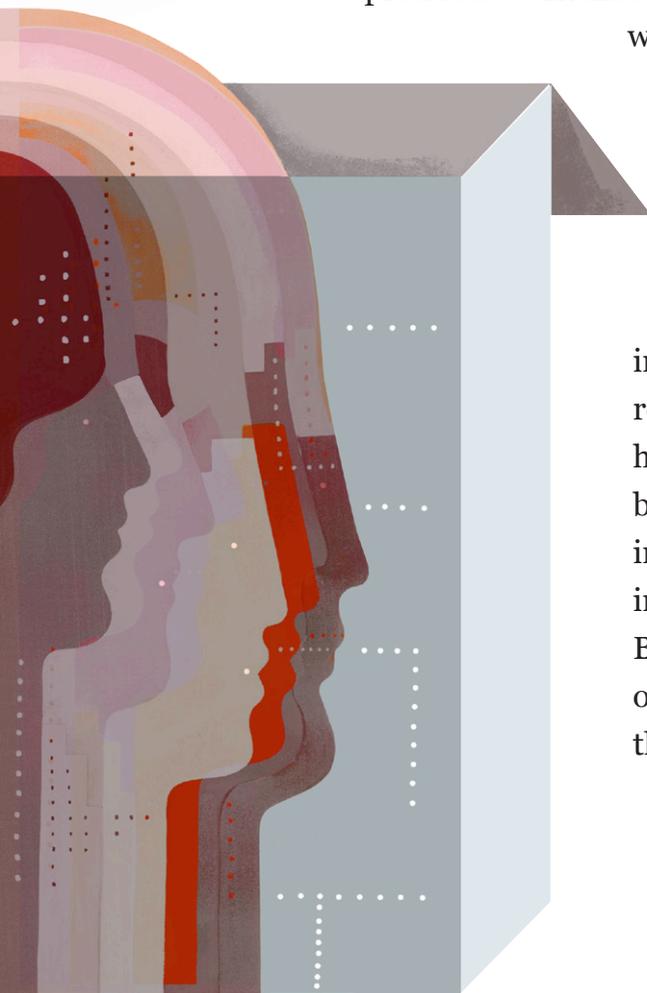
A growing trend in art science collaborations is going some way to bridging the gap between the two worlds. “There has been much talk about building a big beautiful bridge across the chasm”, writes [Siri Hustved](#), when describing the gulf she inhabits as an exponent of transdisciplinary practice. “At the moment we have only a makeshift, wobbly walkway, but I have noticed more and more travellers ambling across it in both directions.”

These travellers who journey back and forth assume many forms – both artist and scientist residency programmes, as well as artist scientist collaborations. Whatever the configuration, they offer varying levels of creative engagement for the scientist; ranging from the bemused bystander to the fully immersed partner.

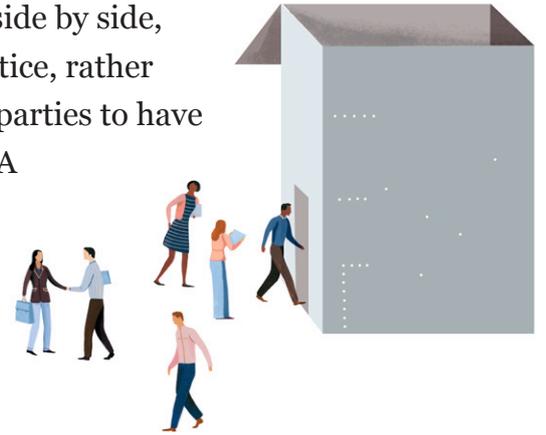
The most common interaction between artists and scientists is the artist residency. This is where the artist is invited to let their imagination run wild within the scientific environment. Using the tools and methods usually reserved for scientists, the artist produces work that challenges, illuminates and inspires new

ways of thinking in scientists. They can ask challenging ethical questions about scientific research, or purely engage on an aesthetic level with the unfamiliar materials and methodology.

Science-inspired art can provide a window into the rarely viewed environment of scientific research. A curious public gets to peer into this highly specialised world that would otherwise be hidden from view. Communicating science in this way celebrates scientific discoveries and instils a real sense of curiosity in the viewer. But it’s not exactly providing scientists with the opportunity to get paint splattered (or whatever the scientific equivalent might be).



This is where carefully planned [collaborations](#) can give both artist and scientist a chance to creatively explore, side by side, a specific area of research. For this to work in practice, rather than just sounding like a good idea, requires both parties to have a genuine understanding of the other's discipline. A balanced appreciation of both the scientific rigour and the value of art within society is essential too. Unless carefully structured, this delicate cohabitation of two distinct cultures risks producing neither valued art nor valid science.



It might seem unlikely that scientists and artists can work together at all given the apparent contrasts of their two worlds. But [neuroscientists have found](#) that the cognitive processes of high functioning artists and scientists are no different when it comes to creativity. If we lose the clichéd white lab coat and beret, a scientist and an artist actually share a lot. Both have inquiry as their driver and both aim to answer problems through exploration, examination and interpretation. Collaborations between artists and scientists can open up new worlds of thought and it's in these shared worlds that the creative sparks begin to fly.

“Working alongside people from other disciplines throws new light on the nature of how we’re asking our questions and how we’re developing our understanding as well” says Emer O’Doyle, director of the [Dublin’s College of Science Residence Programme](#). With a public that increasingly mistrusts science, this can only be a good thing. We all benefit when scientists engage with society and participate in shared discussions around diversity, ethics and our shared values.

So, approaching many of the scientific challenges we face today from a single perspective seems pretty reckless given what’s at stake – think climate change, species decline and population growth. We need to broaden scientific perspectives. Recognising the importance of creativity and doing a lot more to encourage it, will surely maximize our chances of having more of those “Eureka!” moments – some of which just might save our skins!