Why the 21st Century needs more idealism in science and science policy

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"*Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.*" (Einstein 1931; 49).

Imagination and creativity are key to thriving in a volatile, uncertain, complex and ambiguous world. However, for imagination and creativity to flourish we need space(s) where we can engage in an open-ended and ongoing way with the 'other' and be confronted with alternative viewpoints. We need to explore issues and ideas broadly and at times unconventionally, and crucially, we need to consistently have opportunities to ask, 'what if?'.

However, when new ideas or visions of the possible are articulated, even in tangible or practical ways, they are often dismissed as 'idealistic'. Yet, without idealism we miss opportunities to take a step back and see the world in different ways that can reveal gaps in the status quo, and lead to an imagining and envisioning of possible solutions. Without idealism we are missing a crucial tool that will catalyse disruptions to the present state of affairs. Therefore, if we increase our capacity for idealism in science and in policy, we can create opportunities for finding solutions that will contribute to a future where the planet and our societies are enriched sustainably.

As we seek solutions to 'wicked' challenges, creating a capacity for idealism in science and science policy has arguably never been more pressing. This is not a call to eschew the past, or abandon the robust well established scientific method predicated on observations and data. Rather, it is a call to enrich our approach to finding the solutions we need to create our future. The idealism envisaged here in science is distinct from political idealism. It is possible to bring together the excellence that is achieved through more traditional process-

driven pathways in science innovation, at the same time as remaining open to the insights that can be gleaned from taking a 'what if?' approach that raises new questions, reframes challenges and can offer alternative solutions. If we allow an imagining of possible solutions, we can then work towards creating the architecture and infrastructure that is needed to realise them.

Specifically, incorporating idealism into science and science policy makes it possible to

1. Be agile and resilient
2. Gain benefits from process-driven and solutions-driven approaches
3. Enable change that leads to a more sustainable, equitable future.

Agility and Resilience

Our recent history has taught us the value of being able to thrive in times of gradual incremental progression (that often takes place over the long term), but at the same time being sufficiently agile and resilient to respond and cope when seismic shifts occur that change the status quo (in the relatively immediate term). For example, the restrictions on travel during the pandemic that were introduced in many regions very rapidly, led to many scientists exchanging their labs for their homes as their primary place of work. This significant change resulted in a reimagining of how to undertake and continue research in many fields. For example, as new access to virtual communication tools was introduced, new methods for online and virtual participation were developed to keep research studies happening. Critically these methods could not reproduce exactly what in-person studies could achieve, but virtual methods created different opportunities, with many increasing the accessibility of the research and the number and diversity of participants in studies.

 At the same time, idealism in science can itself be the disruption to the status quo that introduces seismic shifts in a landscape of incremental change that may be needed for breakthroughs. Technology companies offer a good working example. Apple, for example, has incrementally developed their laptop products over many years, gradually refining and enhancing the hardware and software capabilities. At the same time, they have created opportunities for idealism, imagining a world with a touchscreen device that creates a new relationship with the internet and connectivity that has profoundly changed society. As we look to the future in the light of our experience of a global pandemic there is wisdom in considering how we can restore the benefits of the previous status quo as well as embracing the new tools, capabilities and culture that have emerged as a result of the global lockdowns to imagine and build the future in an inclusive and equitable way.

Process-driven and solutions driven

If we consider our pathways to innovation and finding solutions to key challenge areas, we should look to incorporate the 'genius of the AND' (first articulated by Collins and Porras

(1997)) into those pathways as we move forward. There are many examples of successes that can be achieved by incorporating well-established problem-focused approaches that offer clear processes and pathways to define a specific challenge and then develop innovations to address that challenge. Dyson is a frequently cited example of how by iteration it is possible to achieve a new outcome, with 15 years and 5127 different prototypes of the dual cyclone vacuum cleaner that eventually revolutionised the market. However, we also need to incorporate a capacity to envision a solution, or multiple solutions, to a given problem. Taking this type of solutions-driven approach which can create an 'Impeller' (as outlined in Watkins and May (2021)) has significant potential. We do not need to choose between these approaches. Holding both together would create infrastructures and culture that generates a capacity to utilise the best method for the challenge in hand and will maximise opportunities to achieve the innovations we seek as we face global complex challenges.

Enabling change holistically

In all of this we need to recognise that systems and processes have huge value, but they are not separate from the people who engage with them. If we are able to embrace idealism in our approach to science and how that science contributes to policy, we create an opportunity for change that occurs through culture and storytelling. Storytelling can engage both the head and the heart, and lead to individual and corporate changes in behaviour. The reduction in single-use plastics offers a powerful example. There has been a 95% reduction in the use of single-use plastic bags in the UK since legislation led to customers having to pay a small charge for a bag to carry goods away from the point of sale. A simple statistic hides deep complexity. Introducing a cost clearly had a significant impact in plastic bag usage and the uptake of individuals being willing to carry and use reusable bags. Yet the pathway to that legislation is arguably a long and multifaceted one, and one that has almost certainly resulted, in part, from stunning documentary media forms that have shared the wonders of the planet we live in over many decades. Those programmes have planted seeds that create in their audiences a drive to live more sustainably and catalyse a culture change in society that meant that creating and supporting the legislation could be a vote-winning issue. Thinking of science as a commons, where science and knowledge are a resource for society, could be considered to be idealistic. Yet it is precisely in such a context that idealism will flourish and catalyse creativity and innovative problem solving.

Summary

Therefore, we need more idealism in science and science policy to find solutions to challenges. If we restrict ourselves to what is tangible, known and established today, there is a risk that possible solutions to 'wicked' challenges that contribute to enriched and thriving individuals, societies, and their natural ecosystems could be missed. But if we ask, 'what if?', we introduce a capacity for idealism that opens up opportunities for creative critical thinking and imagination.

We need to commit to an approach that seeks to have the best of everything rather than operate within an 'either/or' framework. Infusing idealism into science and science policy broadens our vision, creates space to imagine, and a capacity to unlearn and relearn the established ways of observing and addressing challenges. We need to create opportunities to bring together both incremental *and* stepwise change pathways, both process-driven *and* solution-driven approaches, and a consideration of people *and* environment, and people *and* technology. If we can bring these together, we maximise our chances of the breakthroughs that are needed to be part of creating a more equitable future where society and our planet can thrive.   We need to support efforts to imagine a better future. That is going to mean being the members of our communities that engage with and promote those conversations, and being brave enough to ask, 'what if'.

References

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