Preface

Don’t ever forget these things:
The nature of the world.
My nature.
How I relate to the world.
What proportion of it I make up.
That you are part of nature, and no one can prevent you from speaking and acting in harmony with it, always.
– Marcus Aurelius, Meditations

Because of the speed with which events and scientific breakthroughs are communicated and turned into marketable products in the contemporary world, many books dealing with emerging technology are virtually out of date at the time of publication. This book seeks to avoid that disadvantage by setting its arguments against what will hopefully remain timeless backgrounds: the natural beauty of our Earth and the human struggle to not only discern the laws of the physical universe, but also to cohere with them by actions that promote great social virtues such as justice and equity. It makes a case, in that context, for how the most promising new technology of our age (nanotechnology), when properly governed, is likely to help resolve the looming social and environmental crises that threaten our existence.

These pages also chart a personal intellectual and moral journey in which the natural environment has been an important co-conspirator. They plot thoughts and dreams about environmental law and justice that began emerging while I was working with Justice Lionel Murphy as a young lawyer by Lake Burley Griffin in Canberra. They take in others about environmental sustainability that arose by Henry Thoreau’s pond near the small town of Concord in Massachusetts and amongst a ‘New Age’ community in a pine forest by the village of Findhorn in Scotland. They incorporate views about public health arising from experiences practising emergency medicine in the Wagga Wagga general hospital by the Murrumbidgee River and the Alfred Hospital Intensive Care Unit near the Yarra River in Melbourne. They draw upon reflections on human purpose that arose by the ruins of the ancient Buddhist universities of Nalanda and Vikramasila in northern India, as well as a Buddhist monastery (Wat Hin Maak Peng) next to the Mekong River in northern Thailand. They reflect
experiences fighting (in the media and in Senate committees) supranational corporations attempting to use trade agreements to alter democratically endorsed health policy.

What follows is a personal opinion on what should be nanotechnology’s pre- eminent role in sustaining our world. Those particular ideas developed whilst on a Brocher Foundation Fellowship in Geneva, while participating in neutron scattering experiments at Lucas Heights in Sydney and Grenoble in France as well as, most particularly, through discussions with experts in artificial photosynthesis at physics and chemistry conferences — beside a melting glacier at Obergurgl in Austria and amongst the World Heritage listed beauty of Lord Howe Island.

This small book is about how humanity should best use its newest building blocks, material and conceptual — both in technology and in governance. It involves a consideration of some of the most fundamental laws of our world — equations relating, for example, to time, space and consciousness, as well as moral injunctions emerging from our foundational social virtues and collective conscience. It considers how important it is to promote the understanding that reality in not only its physical but its moral and jurisprudential forms is shaped by laws of a geometrical structure only partially revealed to us by our senses and common sense. It examines the hypothesis that worldwide use of nanotechnology should take place in a normative context coherent with its foundational science. A major outcome of such reasoning may be to emphasise environmental sustainability as a foundational social virtue in global governance theory and structures.

The idea that social laws should draw their fundamental impetus and insights from science is not by any means the dominant view amongst contemporary policy or law-makers. Many continue to see trade-offs between short-term political expediency, private corporate interests and religious ideology (in one of its numerous, institutionally conflicting forms) as the inevitable source of governance norms at local, national and global levels. The debate over global legal responses to scientifically proven anthropogenic climate change is a pertinent example of such conceptual positions. Altruistic and beneficent goals are far from inevitable components of any new technology’s widespread use; indeed it seems to follow some implicit societal principle that a large proportion of people and political parties deny such aims are presently or should ever be part of everyday human experience.

History has proven how impossible it is to accurately predict technological change. Indeed, from a historical perspective any technology may be viewed as but a hardening of consciousness, a temporary solidification of the onward thrust of the human impulse, as shaped by material and moral pressures. This
text aims to stimulate researchers, students and policy-makers to become more critically interested in how nanotechnology, properly coordinated on a global scale, can assist in resolving some of the most urgent problems facing humanity and our planet. At a more fundamental level it is designed to encourage such people to think better, if only at first for the simple joy of doing so, about how nanoscience may help us to develop the legal norms and governance structures that will allow nanotechnology to play this valuable role.

Let's now turn to Chapter 1 and its introduction to some basic concepts underpinning nanoscience and environmental sustainability in governance. That chapter will end by questioning whether humanity needs a Big Science nanotechnology for a sustainability project focused on problems such as expanding human energy and food demands, poverty and environmental degradation. It will consider, if such a project can be supported ideally, by what practical criteria we should select its subject and best construct the grand design of its governance architecture. The following chapters set out the major obstacles to that vision, the possible candidates for such a project and a final explication of the most feasible amongst them.