

MANIFESTO for the GREEN MIND

Jules Pretty and colleagues
call for a revolution to bring
Nature into our lives

Every child should be outdoors every day



Children Running in the Park, Derby, 2002 by Andrew Macara
Private Collection / Bridgeman Images

Listen. Have you heard this tale? Progress carved a path through forest and swamp, shadows gone under centuries of light. Progress offered freedom to individuals, reason hand in hand as darkness disappeared. There were setbacks but, oh, they were only minor. In the richer countries, people produced and earned more, consumed much more. Princes and princesses gold-glittered, from the poorer countries aspirations converged.

In just the last two generations, world GDP per person has tripled; in the affluent countries it has quadrupled. This planet now produces 35% more food per person; infant mortality has fallen from 150 to 50 per 1,000 live births, in affluent countries down to 5 per 1,000.

But you know what follows. Darkness lurks in every fairy tale, a reckoning still to come. We consume more, we fill the atmosphere with carbon dioxide. We have more stuff, our lives are more convenient, yet we are not happier. We have solved many infectious diseases, yet we have stumbled into an era of savage health problems caused by our behaviours. We have built cities monumental, yet we have moved further from Nature. The way we live today is killing people in affluent countries – through cardiovascular disease, obesity, type 2 diabetes, mental ill health, dementia and loneliness. We are living longer, but we are not sure it will be worth it.

In this torrid tale, we have not learnt to live happier ever after.

At the University of Essex, we have worked for 15 years on how Nature produces mental and physical health benefits. We call this 'green exercise'. It works for all people, young and old, rich and poor, all cultural groups, in all green environments whether urban park or Nature reserve, whether wild or farmed, small or large. We have shown that a five-minute dose of Nature brings immediate wellbeing. All activities work too, and most people receive an additional benefit from social engagement – doing things together.

There is something very ancient going on here: we humans evolved in natural environments, learned to cooperate, shaped the land for food and resource. Now we can measure how good this Nature and social engagement is for us.

Yet still those lifestyle health problems wash ashore, costing the United Kingdom £150 billion every year for treatment. We know the primary causes, yet we seem helpless. Too many calories consumed, too little daily physical activity, irregular social and cognitive engagement. Progress returns to this tale: it is the simple fault of individuals. Their choices, your choices – you made them. You will live and die by them. And meanwhile grow unhappier.

Pause a moment. Here is a sunnier saga. Individual choices are really not failures of free will. They are shaped by urban design and planning, by transport systems, by advertising and corporate self-interest, by access to green space and cultural norms. Social and economic environments shape behaviours. Residents of London walk 292 miles per year, but rural Britons walk just 122 miles. Obesity afflicts 35% of adults in the United States, but in New York's Manhattan district, where there are pavements and public transport, people walk more, and only 15% are obese. In the Japanese longevity hotspots of Nagano and Okinawa there are record numbers of happy centenarians, their cultures encouraging healthy and tasty foods, regular physical activity outdoors,

social connections and continued cognitive engagement.

Our story centres on green minds, and offers explanation and a manifesto for action. It surely is not too much to demand a sustainable planet *and* contented people. We have now developed a green mind theory to link the human mind with our brains and bodies, and connect bodies through behaviours into natural and social environments.

We know this: environments shape bodies, brains and minds; minds in turn drive body behaviours that shape the external environment. Recent discoveries come from neuroscience and hormones, from loneliness to longevity research, from nudge behaviours to choice architecture, and from many spiritual and wisdom traditions.

The green mind theory centres on a simple idea that the brain comprises two parts: one red, one blue. The red brain is ancient, and centres on the bottom brainstem: it is fast-acting, involuntary, and driver of fight-and-flight behaviours. The blue brain is more recent: it is slower, voluntary, the centre for learning, and driver of rest-and-digest. The bottom brain reacts before you think and directs the sympathetic nervous system (SNS). The top brain is calming, directing the parasympathetic nervous system (PNS). A mix of blue and red is best for health and happiness.

But beware: natural selection built a negativity bias into your mind and brain. The gatekeepers are the amygdala nuclei, deep within the brain's temporal lobes, and highly responsive to alerts. To miss one tiger in the bushes meant death to an ancestor; to run 99 times out of 100 when there was no tiger meant survival. The brain-mind thus evolved a default mode: fast, automated, fight-flight. There is no moderation in the amygdala: it is on or off, responding before thought. The blue brain contains centres for emotions, memory-forming and bonding. In its cortex are abilities to learn, plan, make choices, and the social abilities of empathy and language.

Our minds are built from experiences, and we use the term 'green mind' to indicate that there is an optimal daily mix of mainly PNS-blue, some mild SNS-red for interest and excitement, and occasional spikes of SNS-red when alarmed. Blue and red is best for health and happiness; too much red is bad for health.

In modern affluent economies dominated by material consumption and the manufactured desires for always more, the red mode is over-active. Modern life is lived on simmer,

producing non-stop SNS activation. When the wolf knocks on the door, there are consequences. The SNS-red ramps up heart and lung activity, raises blood pressure, switches off the immune and unnecessary memory formation. You run; you need only muscles and oxygen.

Except mostly now we do not run. Too much red impacts badly on gastrointestinal (more ulcers and inflammatory bowel syndrome), immune (slower wound healing, more colds and flus), cardiovascular (hardened arteries) and endocrine (more type 2 diabetes) systems. Going red feels bad because it is bad.

Some spiritual and wisdom traditions call these red alerts 'first arrows': these are fired by the amygdala, and you cannot avoid them. The second arrows, comprising how we feel in response to the first, produce feelings of unfairness, guilt, further fear, anger, upset, anxiety. Sometimes second arrows arise from anxious expectation or dashed hope, even when there has been no first arrow. An active blue brain can suppress second arrows. It seems we might have choices.

There are methods to quiet an over-active red brain, all with one principle in common. Immersion and attentiveness shut down second arrows, improving wellbeing. Activities that are immersive and involve focused attention reduce oxygen consumption, lower heart rate and blood pressure, and increase the release of serotonin and dopamine: we feel better.

Green minds are also more pro-social: they build empathy and trust. Oxytocin increases bonding and understanding between individuals. Increasing the circle of us might be a way to encourage greater care for the planet, resulting in the emergence of greener economies. When the green mind is quiet, the self is stilled. You are not those troubling thoughts; they come and go. They are clouds on a still pond at dawn.

Three types of engagement increase regular attentiveness and immersion – see the panel below. They are

- Nature engagement
- Social engagement
- Craft engagement

To make these produce better health and more happiness, each of us needs to develop new habits. This is always hard. It is why we know what should be good for us, but so often fail to implement it. Good habits are difficult to develop, bad ones hard to give up.

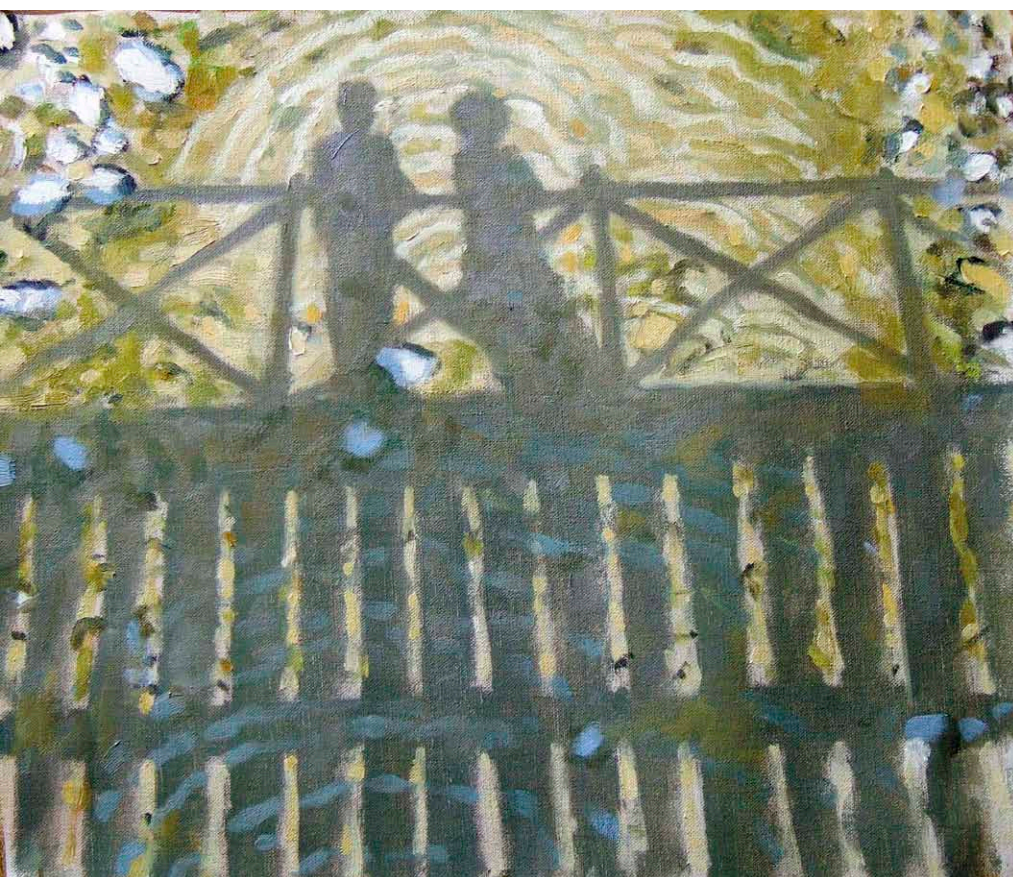
ENGAGEMENTS THAT BUILD THE GREEN MIND

■ Individual activities that deliver health benefits in Nature include walking, gardening and working an allotment, fishing, rock climbing, bike/horse riding, outdoor tai chi/yoga, beach holidays, outdoor swimming, surfing river bores, watching sunsets or waves, dog walking, pigeon racing, pilgrimage walking, bird watching, park running, fen skating.

■ Socially based activities low in material consumption yet delivering health benefits include drama and song/choral groups, dance groups (ballroom dancing, Morris dancing, Highland dance...), coffee mornings, carol singing, conservation volunteering, participative prayer, book groups, curating social media online, bell

ringing, dance clubs/nightclubs, fairs and fetes, parades and carnivals, horticulture societies, community-supported agriculture groups, pop-up music festivals, folklore ceremonies (mud racing, cheese rolling, Halloween, bonfire night, beating the bounds, horn dance, tar-barrel rolling, Apple Day, rush-bearing...).

■ Craft activities that deliver attention and immersion, bringing further wellbeing benefits, include painting, drawing, writing, calligraphy, baking, jam making, carpentry, home repairs and improvements, knitting, needlework, quilting, jewellery making, boatbuilding, craft beer brewing, wine making, pottery, stonemasonry, drystone walling, hedge laying.



The artist and his wife, Lefkas by Andrew Macara www.macara.com

EVERYONE A WINNER: Ten calls to action

- Every child outdoors every day.
- Every adult physically active every day.
- Every adult learning a new skill or craft throughout life.
- Every care home with a garden.
- Every hospital redesigned on greener, pro-social principles.
- Every natural environment promoted for human use.
- Every person able to access green, social and talking therapies.
- Every person engaged in neighbourhood groups for social interaction.
- Every kilogramme of fossil fuel left in the ground.
- Every economy green and pro-social.

Habits and behaviours begin with learning in the prefrontal cortex, and as routines are automated, they are sent down to the lower red brain. As we practise more, the activity becomes automated, and we can pay less attention and use less energy. A rule of thumb: it takes about 50 hours to automate a complex activity.

Think here of learning to drive, and how once you have mastered the skill you can drive for miles on automatic. Thus learning a new habit, such as a diet or daily physical activity, singing or tai chi, requires 50 days at one hour a day, or 100 days at half an hour a day. This is why most diets fail, and why gym memberships are cancelled in February. The brain learns through intense and repeated activity, producing new neural structures. Lecturing your red brain with rational plans does not work. You just have to do the thing for 50 hours or three months.

Now the green mind saga turns to instruction. What should we do to escape the dark forest of thorns? The choices are many. When you learn tai chi, watch a sunset, learn to dance, bake a cake, complete a crossword, something else is happening. You are not engaged in material consumption. You are making memories, learning skills, sharing and giving to others. Inside, you are calming the red brain and improving health outcomes. The future of the planet relies on this substitution of non-material consumption, making more of activities with a light footprint and co-delivery of wellbeing.

The history of implementation of healthy habits in affluent countries is not encouraging. There are five levels for action:

- International agreements: these are rare, slow to implement, and easy to freeride or undermine.

- National policies: few successes for whole populations so far, though anti-smoking and seat-belt legislation are successes.
- Institutional and sectoral policies and practice: the potential for both government and charitable organisations to change practices to affect large numbers of people, such as in education, mental health, social care or hospitals.
- Community actions and ceremonies: already widespread and manifested in local groups and rituals, but undervalued and not yet widely used to improve wellbeing.
- Voluntary actions of individuals: hard to sustain, though the most commonly pushed by governments.

Our manifesto for the green mind focuses on institutions, communities and individuals, and sets out ten calls to action – (see above right). Call on individuals to change behaviours if you can, but it will be institutions and communities that are likely to reach the largest number of people quickly. We need emphasis on Nature, social and craft engagements in neighbourhoods, schools, care homes and health-care facilities. Environmental organisations and charities have a vital role to play: promoting healthy engagement with Nature as part of their mission. Every child should be outdoors every day; every older person in a care home should sit in a garden. Every economy should be green and pro-social.

Now is the time for a new ethic: the economy is the environment. Nature will survive us all. Meanwhile, the green mind manifesto offers routes to wellbeing and a better planet. R

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