GULBENKIAN IDEAS

Let's talk about the Future of Cities

Sue Stuart-Smith

FUTURE FORUM

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of Cities

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Bringing Nature to the City

We live in an era of mass urbanisation along with a growing global burden of mental illness. As a result, the question of how city environments can promote human flourishing has become one of the most pressing issues of our day.

For the first time in human history more people are living in cities than in rural areas. At the start of the 19th century, 3% of people on the planet lived in a city, now over 50% do and this figure is projected to rise to 70% within the next 30 years. In some parts of the world such as the US, UK, and much of Europe, it exceeds this already.

As urban populations have increased around the world, so has the contribution of mental illnesses to global ill-health. This is most striking with depression which is about 40% higher amongst city dwellers than in people living in rural areas and has recently overtaken respiratory illnesses as the leading cause of disability worldwide. Other disorders are raised too. Anxiety disorders are 20% higher and raised levels of violent crime in cities, not surprisingly, results in higher rates of Post-Traumatic Stress Disorder. Levels of psychotic illnesses are also raised, particularly in deprived urban areas. A study in the UK found that the risk of experiencing psychosis is about 40% greater for young people growing up in poor neighbourhoods where there are high levels of crime. Feelings of fear, isolation and powerlessness are likely to contribute to this, but separating out cause and effect is not easy when it comes to city living. People who are vulnerable to mental illness often make their way to large cities and the higher rate of schizophrenia found in urban populations, nearly double that of rural areas, is thought to be partly a result of a migration effect.

Although cities provide economic, cultural and other benefits, it is clear that many inhabitants pay a price for city living and they pay it with their mental health. The growth of urban populations that will take place over the coming decades calls on us to reconsider how cities are conceived of and designed.

Whilst cities may sometimes be inspiring in their grandeur, it is the daily grind of living in them that wears people down. All too often, inhabitants are exposed to noisy, crowded, polluted streets. Horns, sirens and alarms are intended to keep people safe

but processing and filtering them out places demands on the brain. City dwellers are vulnerable to social isolation and tend to lead more unhealthy, sedentary lifestyles and experience greater fears of crime than people living in rural areas. In addition, there are the negative effects of social and economic inequalities, along with intense competition for housing and jobs. The cumulative effect of all these different sources of stress is compounded by a relative lack of so-called 'protective' factors in people's lives. Maintaining strong links with family and friends is known to significantly reduce susceptibility to mental illness but urban lifestyles can make it harder to nurture these bonds. City living also limits scope for spending time in nature. This is another important 'protective' factor but as cities have grown larger, people have become more and more disconnected from the natural world.

The psychiatrist, Professor Andreas Meyer-Lindenberg from the University of Heidelberg has conducted a number of research studies that investigate why city living might be making the brain more susceptible to mental illness. In a study published in Nature in 2011, he compared students living in rural areas with students living in cities. The participants in the study were required to perform a series of stress inducing tests during which they were given negative feedback on their performance. At the same time their brain activity was recorded using functional brain imaging (fMRI). The scans revealed that the part of the brain where potential threats are processed, the amygdala, showed a greater level of activation in students who were currently living in a city. In addition, the part of the cingulate cortex which helps to regulate the amygdala and processes negative emotions was activated most strongly in students who had grown up within a large city. Overall, the study found that students who had lived the longest in cities had the lowest thresholds for anxiety. The findings suggest that rather than acclimatising to stress over time, city dwellers may become more susceptible to it.

Physiologically, the human stress response is a short-term survival strategy involving the autonomic nervous system's fight-flight response and release of the stress hormone cortisol. After a threat has passed, the body recovers through the restorative effects of the parasympathetic, or rest-digest, system but when there is an unrelenting background threat, it can be hard to experience recovery time. This leads to prolonged action of cortisol which has damaging effects because it increases blood pressure, disrupts blood sugar levels and is toxic to the brain. The presence of greenery in a neighbourhood, however, can help protect people from the insidious effects of stress. Green nature's restorative effects on us are both physiological and psychological and are at least in part mediated through activation of the parasympathetic nervous system.

City dwellers living near green space have been found to have healthier levels of salivary cortisol and benefit from a range of positive physical health effects that include lower levels of type II diabetes and cardiovascular disease. Proximity to green space has also been found to reduce anxiety and mental fatigue as well as improving mood. Interventions that introduce community gardens into neighbourhoods that are lacking them have shown positive results including a reduction in levels of crime and violence and the promotion of healthy behaviours such as taking more exercise and interacting

with neighbours. Simply looking at plants has been shown to alter the brain's electrical activity through increasing levels of alpha waves. This induces a state of relaxed alertness and helps lift mood through release of the calming neurotransmitter serotonin.

Yet most cities around the world contain extended areas of high density housing with little in the way of green life around them, whilst wealthier districts are invariably well endowed with parks and gardens. The World Health Organization (WHO) recommends that every inhabitant should have at least half a hectare of green space within 300 metres of their home. A recent study in which researchers analysed satellite images of more than 1,000 European cities in 31 different countries found that 62% of people are living in areas where the proximity to green space does not meet this recommendation.

During the last two years, the pandemic has highlighted this form of social inequality because the positive contribution of urban parks and gardens to well-being has been brought into sharp focus. In cities around the world people have flocked to green spaces in order to alleviate feelings of stress and isolation.

Social isolation in cities is a growing problem and has been for some time. The proportion of American adults who say they are lonely has doubled since the 1980's from 20 % to 40%. And a survey of Londoners carried in 2013 by BBC Local Radio found that 52% of people living in the city say they feel lonely. Loneliness is much more than an unpleasant feeling, it is seriously detrimental to both physical and mental health and is associated with a 30% risk of early death from all causes, an increase that is equivalent to being obese or smoking 15 cigarettes a day.

The anonymity and fragmentation of city life, with its hectic pace, means the places and people within it all too easily get reduced to functions as people go about their daily living. A sense of isolation can be exacerbated through the feeling of being alone in a crowd. This was confirmed in a recent study of people living in cities around the world using the Urban Mind mobile phone app. Hamoud *et al*. found that feelings of loneliness were increased when people were in a crowd but they also found that when people spent time in parks and gardens, they were 28% less likely to report feeling lonely. Another recent study by Astell-Burt *et al* found that for adults living alone, loneliness was significantly reduced if they had proximity to green space. Based on their findings, the authors calculated that if the provision of urban green space was increased to the recommended amount that loneliness in this group could be reduced by as much as half.

My book, *The Well Gardened Mind: Rediscovering Nature in the Modern World*, was published in the UK in 2020. In it, I explore the many reasons why we need to cultivate our connection to nature in order to thrive. The fact that green space has replenishing effects on us should not surprise us for we are in origin a grassland species that emerged in the savannah landscapes of Africa. Landscapes containing flowering plants, trees and greenery would have been conducive to survival and over the course of evolution, our nervous systems and immune systems have been primed

to function best in response to various aspects of the natural world. Urban concrete and tarmac is, by contrast, hard on us and traffic noise and pollution are harmful to us. However much we may be attracted to the city's neon lights and upbeat energy, in the ancestral recesses of our brains, we are unconsciously primed to respond to green.

The brain is essentially a pattern-recognition organ that needs to make rapid predictions from a vast array of incoming sensory information. The visual patterns found in nature are typified by fractal patterning and this makes the brain's task easier. Sometimes described as 'self-similarity', fractal patterning consists of repeated versions of the same structure on different scales. This is perhaps most clearly illustrated in the form of a tree which repeats its branching structure in ways that are both regular and variable. Fractal patterning contains a strong element of predictability so that at a glance the visual cortex can fill in gaps and assemble a larger picture This means that natural scenery is conducive to 'fluent visual processing', in other words we can sweep over an environment with a relaxed gaze and take it in with a minimum number of eye fixations. Built environments, by contrast, are full of irregular patterns and research has shown that when we scan them, our eyes need to make many more fixations in order to collate the visual information and it therefore takes more energy to process what we are seeing.

Much of nature's soundscape is likewise gentle on the brain. Sounds such as wind blowing through trees, birdsong or gently flowing water are restful because like fractals, they exhibit a quality of difference-within-sameness, in other words they are variable within a predictable range. The overall effect on the nervous system is one of relaxed responsiveness. In comparison the soundscape of the city tends to be unpredictable and jarring, easily putting us on edge.

This basic affinity for natural environments means that some green space is always better than none. Nevertheless, green space can vary enormously in the quality of experience it provides. People are generally more engaged where there is complexity within the planting and scope for seasonal variation with plants that encourage birds and pollinators. A research study in the city of Sheffield in the UK found that there was a clear relationship between the degree of restoration people experienced through visiting parks and the amount of biodiversity in the vegetation.

Many of the detrimental effects of city living stem from a basic mismatch: the human brain evolved in the context of the natural world, yet we expect it to function optimally in the unnatural urban surroundings that people inhabit today. However, it doesn't take much to help mitigate these detrimental effects. Within as little as 3 minutes of exposure to a natural setting, beneficial changes in heart rate and blood pressure can be detected and levels of the stress hormone cortisol typically drop after 20-30 minutes.

Brief periods of immersion in nature and even having a view of trees through a window have been shown to improve attention and restore mental energy. Research studies that compare the effects of walking in a park with walking along a highway have found that those who spend time in nature dwell less on anxious or negative thoughts and

perform better in subsequent cognitive tests. Furthermore, the presence of green vegetation helps promote human connection. Often referred to as the 'pro-social' effect of nature, studies have found that people become more empathetic, generous and trusting when they have proximity to trees and plants.

The crucial question for urban planning and public health is how these different benefits might be quantified on a population level. Projections on this scale are not easy to achieve with any accuracy but there are some studies that have attempted to address the question in different and illuminating ways.

A large research project carried out in Brisbane, Australia looked at how often people visited city parks in relation to the state of their health. The research team ran a series of complex computations that took into account all the main social and economic factors known to influence health. The findings suggested that if everyone in Brisbane visited a park each week, there would be 7% fewer cases of depression and 9% fewer cases of high blood pressure.

Another large-scale study carried out by the Centre for Research on Environment, Society and Health (CRESH), based at the Universities of Glasgow and Edinburgh looked at social, economic and health disparities in relation to neighbourhood amenities in a range of European cities. The researchers analysed the provision of shops, public transport and cultural facilities, as well as access to green space. The only one of these variables to show a significant effect was the presence of neighbourhood parks and gardens. The team calculated that the inequalities in mental health that are associated with low income could be reduced through proximity to green space by as much as 40%.

The simple presence of street trees can have a significant effect on how people feel about their lives. A team from the Environmental Neuroscience Lab at the University of Chicago has studied the distribution of trees on residential streets within the city of Toronto. They combined this information with a survey that asked inhabitants to rate their own health. After adjustments for income, education and employment, the team calculated that the inclusion of ten more trees on a city block was associated with lower levels of mental distress of the same magnitude that an extra $10,000 of income would be expected to bring. The positive impact of street trees is confirmed in another study carried out in Leipzig, Germany, and published in 2020. Researchers from the Helmholtz Centre for Environmental Research found that residents of the city with low socioeconomic status who had a high density of street trees in a 100m area around their home were significantly less likely to be prescribed antidepressants than those who did not.

The environmental scientists Frances Kuo and William Sullivan from the University of Illinois have published a number of influential studies demonstrating the beneficial effects of green spaces around deprived social housing communities in Chicago. Their research showed that people who had greenery around them felt more hopeful and less helpless about their circumstances in life than people living in similar housing with little access to green space. Community gardens and parks can function as

intermediate or in-between spaces that foster human connection. Kuo and Sullivan found this was indeed the case and that inhabitants with access to green space knew more of their neighbours and were more likely to feel they had supportive networks around them.

In terms of the impact that gardens and other green spaces can have on health and well-being, one thing is clear - the more deprived a community is, the more powerful the effect.

One long running project that demonstrates this clearly is based in the city of Philadelphia.

Philadelphia's LandCare Program started in 1999, since when over 12,000 small green spaces have been created in run down parts of the city. The project which aims to counteract urban decay is a collaboration with volunteers from the Pennsylvania Horticultural Society who have cleared overgrown, abandoned lots and derelict spaces by removing rubbish and debris, then planting trees and grass. Alongside this, the epidemiologist Professor Charles Branas from Columbia University has been running a research project to monitor the effects.

At the outset, chain link fencing was put around the cleared lots but it soon became clear that people felt kept out and they started using them as a place to throw their trash. When wooden split rail fencing was used instead, a clear sociability effect emerged. This lower level fencing is easy to climb over and it is also possible to sit on the rail. As a result, people began to use the spaces for relaxation and socialising. The plots provided access to a neighbourhood green, which meant that local children who previously had nowhere safe to play out of doors started playing in them. Neighbours who had never set eyes on each other began to converse and connect. Although the volunteers continued to contribute by tending the plots people were free to modify them and as a result began to invest in them.

The neighbourhoods that have benefited from this intervention were decided through a process of random allocation. This means that Branas and his research team have been able to compare the impact of the intervention across districts with similar demographics and have published a number of studies over the years. In terms of methodological rigour, this may be the only randomised controlled trial of urban greening that has so far been carried out.

The findings show a striking contrast between streets where green plots were introduced and those that were left untouched. The beneficial effects were widespread but were significantly greater in neighbourhoods below the poverty line. People reported feeling 60% less fearful about going outside and researchers observed that as people spent more time outdoors, the streets became safer. In areas suffering from severe urban blight, the crime rate dropped by more than 13%, and gun violence by nearly 30% and because the researchers monitored crime rates across the whole of the city, they could tell that the problem was not simply being shifted to a nearby area. Furthermore, feelings of depression and poor mental health for people living near the

newly planted lots almost halved.

The idea that urban greening is a public health issue is not new, it's more that it fell out of favour and lost sway to the commercial pressures of land development. The idea first gained prominence in the 19th century and led to the creation of some of the great city parks such as Central Park in New York and Birkenhead Park in Liverpool. One of the best descriptions of the psychological effect of city parks was written by the American Landscape Designer and creator of New York's Central Park, Frederick Law Olmsted. Spending time in a naturalistic setting, he wrote: "employs the mind without fatigue and yet exercises it; tranquillises it and yet enlivens it; and thus, through the influence of the mind over the body, gives the effect of refreshing rest and re-invigoration to the whole system." City dwellers, Olmsted observed, were prone to nervous tension and anxiety as well as melancholy and he believed that creating accessible and naturalistic green spaces would improve people's mental health.

Another pioneer during this period was the Scottish urban planner, Patrick Geddes, who set about trying to improve the appalling living conditions in the old town of Edinburgh which at that time were among the worst in Europe. One of the first things he did was to encourage the inhabitants of the tenements to grow flowers in window boxes. "No one who studies animate nature'" he later wrote, "can get past the fact of beauty. It is as real in its own way as the force of gravity."

Geddes was particularly concerned to help the inner city children he saw around him who were growing up, as he put it, "starved of nature". This was more than 150 years before Richard Louv coined the phrase "nature deficit disorder" to describe the state of contemporary urban childhood. He created small gardens on waste ground where children could gather and safely play and encouraged local residents to work with him on cultivating some of the ground to grow vegetables which would alleviate the shortage of fresh food.

Geddes understood that growing food creates a connection between people and place and strengthens communities almost better than anything else.

The Incredible Edible movement which began in Todmorden in the north of England and has since become a world-wide movement, is a good example of this effect in action. Incredible Edible is a not for profit community movement that started following the financial crash of 2008 when a group of residents began growing food on disused public land and made it freely available for the inhabitants of Todmorden to pick. No longer the thriving manufacturing centre that it once used to be, the town had long been languishing in a state of post-industrial decline. The civic landscape of Todmorden has been transformed by this project. There are now more than 70 food-growing plots around the town and once a fortnight on a Sunday volunteers can join groups that tend the plots and then sit down and share a meal together afterwards. The project also supports gardening in local schools which connects young people with nature in a way that was not happening before

Community gardening schemes and urban farms bring people together in a

relationship of care. Through the sharing of pleasure and produce, they foster a sense of belonging and promote an attachment to place. In the UK, GP's are increasingly able to refer patients to community schemes through an initiative know as 'social prescribing'. One of the pioneers of this approach is the NHS Lambeth GP food co-operative which was set up in 2013. The project helps foster human connection and is a good example of what can be achieved through cooperation.

The Lambeth GP food co-operative creates food growing gardens within GP clinics that have unused outdoor space. So far, the project has built gardens in 13 of the 45 practices in the borough and there is a waiting list of other practices wanting to join. Lambeth is one of the most deprived boroughs in London with a high percentage of people with long-term health problems such as diabetes, heart disease, arthritis and depression. Many of them are socially isolated and request frequent medical appointments. Patients who attend the project have been found to need fewer appointments. They benefit from making friends and feel they are contributing to a larger project because the food that is grown in the gardens is sold within the GP surgeries. The work of a GP can be relentless and isolating but having a garden onsite brings benefits for the GPs too. It gives them the opportunity to get to know their patients in a different way and allows them to feel more like the community doctors they are supposed to be.

Each community is different and will have varying resources and levels of need but the importance of having safe green spaces which function as in-between spaces cannot be over-estimated. Such spaces change the social landscape and promote well-being but urban planning has repeatedly neglected people's need for them. As a species, we are best adapted to living in relatively small groups of people. Relationships on this scale are more easily based on trust. Urban environments confront us with a mass of other people which challenges our ability to trust and shifts us towards indifference and suspicion. As a result, people limit their capacity for human connection by restricting their consciousness and narrowing their focus. By contrast, spending time in a small sanctuary of green can be a way of opening ourselves up to others and reconnecting with our humanity. In terms of greening the city, this may be nature's most profound effect on us.

Selected References

A full list can be found in Stuart-Smith, S. *The Well Gardened Mind: Rediscovering Nature in the Modern World* (2020) William Collins, London

Mental illnesses in urban populations

Peen, J., Schoevers, R.A., Beekman, A.T. and Dekker, J. (2010), The current status of urban-rural differences in psychiatric disorders. Acta Psychiatrica Scandinavica, 121: 84-93. https://doi.org/10.1111/j.1600-0447.2009.01438.x

City dwellers increased susceptibility to stress

Lederbogen, F., Kirsch, P., Haddad, L., Streit, F., Tost, H., Schuch, P., Wüst, S., Pruessner, J. C., Rietschel, M., Deuschle, M., & Meyer-Lindenberg, A. (2011). City living and urban upbringing affect neural social stress processing in humans. *Nature*, 474(7352), 498–501. https://doi.org/10.1038/nature10190

Beneficial effects of green space

Bennett C, Jones A. The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. Environ Res. 2018 Oct;166:628-637. doi: 10.1016/j.envres.2018.06.030. Epub 2018 Jul 5. PMID: 29982151; PMCID: PMC6562165.

Hartig T. (2008). Green space, psychological restoration, and health inequality. *Lancet* (London, England), 372(9650), 1614–1615. https://doi.org/10.1016/S0140-6736(08)61669-4

WHO recommendations for access to green space

Pereira Barboza, Evelise & Cirach, Marta & Khomenko, Sasha & Iungman, Tamara & Mueller, Natalie & Barrera-Gómez, Jose & Rojas-Rueda, David & Kondo, Michelle & Nieuwenhuijsen, Mark. (2021). Green space and mortality in European cities: a health impact assessment study. The Lancet. Planetary health. 5. e718-e730. 10.1016/S2542-5196(21)00229-1

Loneliness and social isolation

Bennett, K., Gualtieri, T., & Kazmierczyk, B. (2018). Undoing solitary urban design: A review of risk factors and mental health outcomes associated with living in social isolation. *Journal of Urban Design and Mental Health*, 1(4), 1-7. https://www.urbandesignmentalhealth.com/journal-4---solitary-urban-design.html

Hammoud, R., Tognin, S., Bakolis, I. *et al.* Lonely in a crowd: investigating the association between overcrowding and loneliness using smartphone technologies. Sci Rep 11, 24134 (2021). https://doi.org/10.1038/s41598-021-03398-2

Thomas Astell-Burt, Terry Hartig, Simon Eckermann, Mark Nieuwenhuijsen, Anne McMunn, Howard Frumkin, Xiaoqi Feng, More green, less lonely? A longitudinal cohort study, *International Journal of Epidemiology*, (2021) dyab089, https://doi.org/10.1093/ije/dyab089

Visual processing

Hägerhäll, Caroline & Purcell, Terry & Taylor, Richard. (2004). Fractal dimension of landscape silhouette outlines as a predictor of landscape preference. *Journal of Environmental Psychology*. 24. 247-255. 10.1016/j.jenvp.2003.12.004.

Joye, Y., Steg, L., Ünal, A. B., & Pals, R. (2016). When complex is easy on the mind: Internal repetition of visual information in complex objects is a source of perceptual fluency. *Journal of experimental psychology. Human perception and performance*, 42(1), 103–114. https://doi.org/10.1037/xhp0000105

Effects of biodiversity

Fuller, R. A., Irvine, K. N., Devine-Wright, P., Warren, P. H., & Gaston, K. J. (2007). Psychological benefits of greenspace increase with biodiversity. Biology letters, 3(4), 390–394. https://doi.org/10.1098/rsbl.2007.0149

Green space effects on stress, cognition and empathy

Brown, Daniel K *et al.* "Viewing nature scenes positively affects recovery of autonomic function following acute-mental stress." *Environmental science & technology* vol. 47,11 (2013): 5562-9. doi:10.1021/es305019p

Berman, M. G., Jonides, J., & Kaplan, S. (2008). The cognitive benefits of interacting with nature. *Psychological science*, 19(12), 1207–1212. https://doi.org/10.1111/j.1467-9280.2008.02225.x

Weinstein, N., Przybylski, A. K., & Ryan, R. M. (2009). Can nature make us more caring? Effects of immersion in nature on intrinsic aspirations and generosity. *Personality & social psychology bulletin*, 35(10), 1315–1329. https://doi.org/10.1177/0146167209341649

Goldy SP, Piff PK. Toward a social ecology of prosociality: why, when, and where nature enhances social connection. Curr Opin Psychol. (2020) 32:27-31. doi: 10.1016/j.copsyc.2019.06.016.

Population studies on effects of green space on health and inequality

Shanahan, Danielle & Bush, Robert & Gaston, Kevin & Lin, Brenda & Dean, Julie & Barber, Elizabeth & Fuller, Richard. (2016). Health Benefits from Nature Experiences Depend on Dose. Scientific Reports. 6. 28551. 10.1038/srep28551.

Mitchell, R. J., Richardson, E. A., Shortt, N. K., & Pearce, J. R. (2015). Neighborhood Environments and Socioeconomic Inequalities in Mental Well-Being. *American journal of preventive medicine*, 49(1), 80–84. https://doi.org/10.1016/j.amepre.2015.01.017

Impact of street trees

Kardan, O., Gozdyra, P., Misic, B., Moola, F., Palmer, L. J., Paus, T., & Berman, M. G. (2015). Neighborhood greenspace and health in a large urban center. *Scientific reports*, 5, 11610. https://doi.org/10.1038/srep11610

Marselle, M.R., Bowler, D.E., Watzema, J. *et al.* Urban street tree biodiversity and antidepressant prescriptions. *Sci Rep* 10, 22445 (2020). https://doi.org/10.1038/s41598-020-79924-5

Effects of greening in socially deprived areas: Chicago and Philadelphia

Kuo, F.E., Sullivan, W.C., Coley, R.L. *et al.* Fertile Ground for Community: Inner-City Neighborhood Common Spaces. *Am J Community Psychol* 26, 823–851 (1998). https://doi.org/10.1023/A:1022294028903

South EC, Hohl BC, Kondo MC, MacDonald JM, Branas CC. Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults: A Cluster Randomized Trial. *JAMA Netw Open*. 2018;1(3): e180298. doi:10.1001/jamanetworkopen.2018.0298

Garvin, Eugenia & Cannuscio, Carolyn & Branas, Charles. (2012). Greening vacant lots to reduce violent crime: A randomised controlled trial. *Injury prevention: journal of the International Society for Child and Adolescent Injury Prevention*. 19. 10.1136/injuryprev-2012-040439.

Urban greening origins in the 19th C

Olmsted, F. & Nash, R. The Value and Care of Parks (1865) Report to the Congress of the State of California. *Reprinted in The American Environment*, Hillsdale, NJ. pp18-24

Patrick Geddes and Sir J. Arthur Thomson, *Life: Outlines of General Biology* (1931)

Incredible Edible Todmorden

https://www.incredible-edible-todmorden.co.uk/

Lambeth GP Food Co-operative

http://lambeth.gpfoodcoop.org.uk/About-us

Sue Stuart-Smith is a psychiatrist and psychoanalytic psychotherapist who graduated in English literature at Cambridge University before going on to train as a doctor. She worked in the National Health Service for many years, becoming the lead clinician for psychotherapy in Hertfordshire. She currently teaches at The Tavistock Clinic and is a Consultant at DocHealth, a not-for-profit service helping doctors suffering from stress and burnout. She is married to Tom Stuart-Smith, the celebrated garden designer, and, over thirty years together, they have created the wonderful Barn Garden in Hertfordshire. Her book, *The Well Gardened Mind*, was published in 2020. It became a Sunday Times bestseller and has been translated into fifteen languages.

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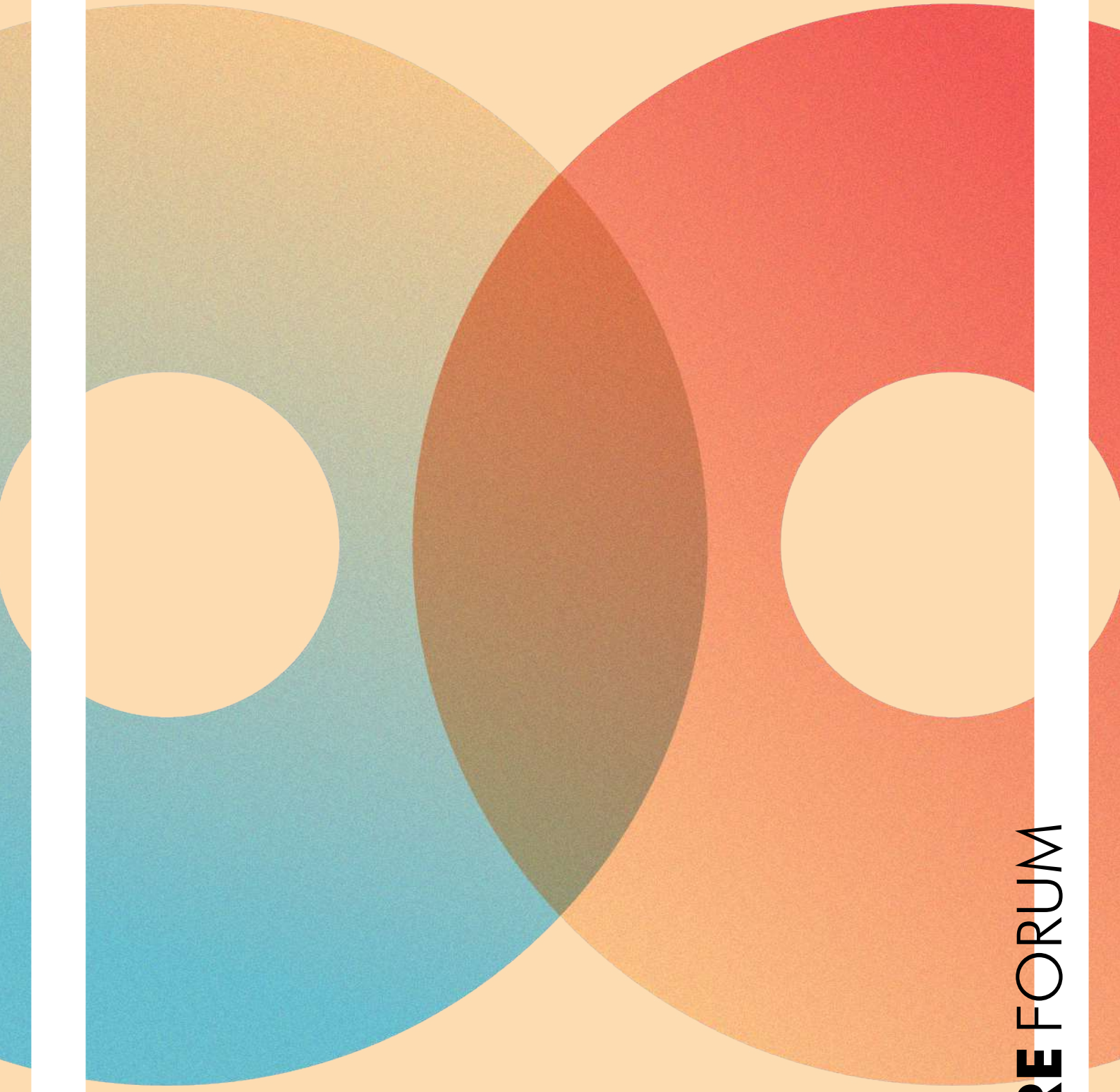

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