

Weaponizing Nature: The Psychological Power of Trees

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Accepting that differences in environment correspond to differences in human health, it is understood that landscape architects, through the design and improvement of spaces of nature, act to positively shape physical and mental states. Indeed, it is critical to the profession of landscape architecture to make a strong assertion that how nature is designed, and consequently perceived, matters, for if there was no measurable difference between the health impacts of a self-generating nature and the work of the trained landscape architect, then design services would be far less necessary. This being the case, the landscape architect is responsible for shaping environments which aim to have a controlled, predictable and measurable impact on the mental health and well-being of the public. This paper extends the trajectory of this argument, asking, what if any, is the professions obligation to contribute design expertise to sites facing the combined challenges of a significant depression of human health and the loss of nature.

There is a large body of evidence that supports the idea that contact with nature promotes human health. Studies have shown that environmental factors play an important role in treating, maintaining and improving mental health and wellbeing. Whether physical or visual, exposure to nature has been demonstrated to alter mental states through reducing stress, restoring attention, and improving emotional connection to place, to name only a few mechanisms recognized in the scientific literature.¹ While there remains controversy over definitions of both nature and health, only a skeptic would deny that the human mental state is altered by the sensed environment. Furthermore, it stands to reason that the quality of the environment under observation by our senses matters: some environments are better than others, and what we would reasonably qualify as a better mental state is associated with a better perceptual environment. Here of course the term better is open to debate, but that should not deny us from accepting the proposition. So, advocating for the inclusion of nature in one's immediate environment is a supposition that nature represents an improved environment and will correspondingly improve that individual's mental condition.

This was indeed one of the main tenets of Frederick Law Olmsted's work. In the industrializing city of New York, Olmsted witnessed that the working class had increasingly limited opportunities to perceive nature. He deduced that for this population, the degradation of mental health and

wellbeing was as a direct result of the lack of nature in the urban environment. In response, Olmsted, working with Calvert Vaux, completed their most famous work, New York's Central Park, which was in many ways a public health initiative. An explicit goal of Central Park was to reinstate good mental and physical health among the working class of the city that were exhausted from their labor. In considering how to address this urban ill of physical and mental exhaustion that reduced productivity and social stability, we have Olmsted's words through his biographer Witold Rybczynski: "It is one great purpose of [Central Park], to supply to the hundreds of thousands of tired workers, who have no opportunity to spend their summers in the country, a specimen of God's handiwork that shall be to them, inexpensively, what a month or two in the White Mountains or the Adirondacks is, at great cost, to those in easier circumstances."² This passage refers not just to physical exhaustion, as then the prescription would likely have been more comfortable beds, or more time in them. The words pertain also to mental exhaustion, which would be restored through exposure to nature. From Central Park, designed in 1858, to the present, landscape architects have continued to seek the improvement of mental health and wellbeing through incorporating nature into the urban environment. Not surprisingly, since the 1850s, ongoing research strives to better understand the relationship between exposure to nature, designed and otherwise, and improvements in mental health. Yet, in every case, this research is aimed at finding a positive correlation between the two. One must wonder if exposure to nature will always positively impact mental conditions, or if time in nature can also degrade one's cognitive state.

Central Park is an important precedent because it assists in defining what we mean by nature. Olmsted distinguishes between wilderness beyond the urban, the White Mountains for example, and the urban park. Yet, at the same time, he asserts that a designed set of properties drawn from the wilderness can be successfully introduced into the urban park with similar healing effects. This radical scale shift and reduction in structural complexity of what constitutes nature has far-reaching impacts. For example, we can no longer argue for the preservation of large intact natural areas on the basis of human health because the same benefits can be provided through urban simulation. Certainly, there is a difference in amount of nature between that which is found in urban environments, parks and the like, and tracts of wilderness beyond the city, but Olmsted has set forward a position that there is



Figure 1: The Afghan Peace Volunteers plant a tree in Kabul, Afghanistan on Monday, March 31, 2014., Afghan Peace Volunteers, ourjourneyto-smile.com.

not a difference in kind with increasing scale. This concession is necessary if one aspires to design scaled wilderness experiences in urban settings.³ For the purpose of this paper, the only point to be drawn from this is that, for the benefit of mental health, nature has been defined in a very limited way. Indeed, the American Society of Landscape Architects (ASLA), of which the sons of Olmsted and Vaux were founding members, prominently cite on their website the conclusions of a paper published in the *Journal of Epidemiology and Community Health*. It reads: “living close to parks, or at least near lots of trees, can have far reaching mental health benefits for people.”⁴ Notwithstanding the obviously problematic quantitative measure of “lots,” nature is here reduced to a variable number of trees in so far as human mental health benefits are concerned. In summary, we take forward three conclusions: first, that differences in environments correspond to differences in mental states and wellbeing; second, that landscape architects, through the design and improvement of human environments, act to positively shape physical and mental states; and third, that trees, a common design element of the landscape architect, positively affect mental health and wellbeing.

As the ASLA prepares for a “broad communications campaign to educate the public about the health benefits of nature,”⁵

with aims at transforming our urban environments to include more trees and securing ongoing work for the profession, it is important to question the limits of this work. For example, can any degraded landscape be improved through the planting of trees? Or, are there levels of degradation and consequent challenges to physical and mental health that are too great for trees to positively impact? We should also ask if there are any risks to planting trees in treeless urban areas and to carrying out planting efforts in areas that are often also the poorest parts of the city. Returning to the ASLA’s website, on a page about stress, we read “that trees and green space are a major predictor of longevity, especially among people living [in] lower-incomes communities.”⁶ When considering depression, we learn from the website, “living in places without parks or trees, especially if you are young or poor, can have major negative impacts.”⁷ As presented by the ASLA, and popularly accepted in the profession, trees act always in service of the public good.

Yet, it is worth considering even more drastically de-vegetated environments. Afghanistan was listed as having one of the lowest forest covers in the world, at 1.3 percent by a 2007 report out of the University of British Columbia (UBC), Canada.⁸ Contrary to the common media portrayal of Afghanistan as a desert nation, this country once had lush forests. However, these forests have been decimated by human action. The UBC report also tells us that rates of deforestation had reached up to 70 percent in some provinces at the time

of publication. This high rate was measured over a twenty-year period, since around the end of the Soviet-Afghan war. Presumably, even more trees were destroyed during that war, and deforestation has likely continued since 2007. Afghanistan then appears to be an extreme case to study the impacts of both the loss of nature and consequent reforestation efforts on population health. The UBC report discusses the work of Doctor Gary Q. Bull, then Associate Professor and now Head of the Forest Resources Management Department. Bull worked in collaboration with the Wildlife Conservation Society (WCS) on a project funded by the United States Agency for International Development (USAID) that helped to protect and restore Afghanistan's largest remaining forest found in the province of Nuristan. It is interesting that USAID is funding a forest restoration project. On the face of it, this model of an American organization paying to protect and plant trees in a foreign sovereign nation feels distant from the advocacy of the ALSA concentrating on domestic planting in the United States, yet, it is also so noted by the ASLA that peoples very strong preference for a natural setting is cross-cultural.⁹ In this light, Afghanistan appears as a valid and extreme international case study to speculate on the limits of mental health benefits gained through exposure to nature. In addition, working across cultures which at times hold deep ideological division places increasing pressure on species selection, formal design strategies, and planting and maintenance decisions.

The purpose of this speculation is to challenge the aforementioned conclusions. If it remains true that differences in environments correspond to differences in mental states and wellbeing, then it is expedient to entertain the possibility that our other two conclusions are not always positive in their outcome. Returning to them in turn, we ask first, is it possible that landscape architects, through the design and improvement of human environments, can act to negatively shape physical and mental states? If the answer is no, then design can proceed without caution. Yet if the answer is yes, then one would need to understand the mechanism at play in order to avoid this outcome. Second, can trees, a common design element of the landscape architect, negatively affect mental health and wellbeing? In admitting that the positive health benefits of one tree species can be stronger than another species, we establish a gradient. Each tree would find itself rated against others and we would ask if any negatively affect our health, thinking for example about an off scented species, a scary looking tree, one struck down by lightning, one festering with sickness. Studying Afghanistan then allows us to better resolve if the mental health benefits gained by exposure to trees are universally positive, no matter the species, site and situation in which the interaction takes place.

As it turns out, American taxpayers have already been funding a military reforestation campaign in Afghanistan through the well-supported Commander's Emergency Response Program

(CERP). The Department of Defense (DOD) established CERP in 2004. The program was designed to allow military commanders to spend money on reconstruction projects and urgent humanitarian relief in active theaters. Projects were implemented in every Afghan province, and between fiscal year (FY) 2004 and FY 2014, Congress appropriated a total of \$3.7 billion for CERP alone. The origins of this program stem from the widely held belief that development assistance contributes to the security and stability of war-torn regions and increases tolerance for the presence of occupying forces.¹⁰ The popularity of this program is also connected to the writing of Joseph Nye, former Dean of the Harvard's Kennedy School of Government, who coined the term "Soft Power" to describe a strategy of non-coercive warfighting. Through this doctrine, aid is an integral component of the American military's population-centered counterinsurgency (COIN) approach of winning the citizenry away from insurgents and to the Afghan government.¹¹ For example, CERP's Standard Operating Procedure (SOP), entitled Money as a Weapon System - Afghanistan (MAAWS-A), is a strategy for using aid as a COIN tool. The CERP MAAWS-A SOP is a procedural guide that explains how U.S. military commanders can successfully apply for funding usable in their local area of operations.

Through CERP, the work of tree planting has most often been a minor component of larger "bulk funding" projects, and revegetation has often been a reconciliatory expense to cover battle damage to existing orchards. However, there are also more tree specific projects such as the "Parwan DAIL (Directorate of Agriculture, Irrigation, and Livestock) Pinetree saplings," an expense of \$10,900 for 3,000 pine tree saplings to be distributed and planted for education, erosion prevention, and as a renewable source of income.¹² Another example at a larger scale and cost are the multiple "Seed Kits and Almond Tree Distribution" projects. At least ten such programs were run at a cost of \$98,837 and through which seeds and fertilizer were distributed to multiple families with a goal to support a viable small-scale agricultural economy.¹³ A final example, "TX ADT IV Bulk CERP Funds APR 11," supported with \$50,000 in taxpayer dollars, is indicative of how explicitly tree planting was a tool of warfighting. The description of Invoice #003 to the fund states, "This project paid Muhibullah Ekhpelwak, the Qarabagh District Sub Governor to purchase 3,000 fruit tree saplings (green/red plums and apricot) to plant in front of shops in the Qarabagh bazaar, Qarabagh District, Ghazni Province during Nawruz (the Afghan New Year). This project enhanced the credibility of the Qarabagh District government and the Gahzni Provincial government."¹⁴ A reading of multiple funded and executed planting programs makes clear that trees have two primary uses for CERP operations. The first is increasing local government credibility, and the second is economic empowerment – in other words, security and stability. However, the ASLA is pointing to an even greater benefit that trees are poised to contribute to warfighting operations. The preceding conclusion that trees



Figure 2: General David Petraeus, ISAF Commander, and U.S. Ambassador Karl W. Eikenberry, plant a tree in Kabul, Afghanistan on Sunday, March 6, 2011., Flickr, US Embassy Kabul Afghanistan.

positively affect mental health and wellbeing, as advocated for by landscape architects, is easily weaponized if re-stated: trees positively affect minds and hearts.

Winning “hearts and minds” is a strategy whereby the execution of a military operation is carried out not through force of strength but by appealing to collective individual emotional and intellectual faculties. While the specific use of the term has decreased in popularity, the general definition expresses the same rationale as Nye’s Soft Power. Both are a component of the Military Information Support Operations (MISO) Command, which has the stated objective of convincing “enemy, neutral, and friendly nations and forces to take action favorable to the United States and its allies,” through a non-forceful, non-violent use of “logic, fear, desire or other mental factors to promote specific emotions, attitudes or behaviors.”¹⁵ Wellbeing and mental health are not exactly synonymous with hearts and minds but are complementary and interconnected terms. It stands to reason that a population whose mental health and wellbeing has been improved will correspondingly experience greater stability and security. This is similar to the assumption made by the military and other aid organizations that poverty and insecurity are linked and can be improved with economic development. As we have seen, this popular belief enabled CERP to become such

an influential program. And while the link between poverty and stability has recently received criticism, support seems only to be growing for the relationship between trees and overall human health.¹⁶

Upon accepting the position that trees possess the ability to improve local environments and consequently mental and emotional states, we begin to understand the ethical conflicts inherent in design. The 3,000 plum and apricot trees that were planted in front of shops in the Qarabagh bazaar were either done so haphazardly or were planted with design intent. For landscape architects, the assertion that design matters is core to the profession, for if there was no measurable difference between self-planting and the work of the trained landscape architect, design services would not be needed. Design decisions will often consider tree species, spacing, organization, circulation, and many other variables, where precision in planting is critical for performance, program, and experience. A planting strategy that defines a series of outdoor rooms, for example, can increase social interaction and consequent wellbeing. A planting strategy that organizes alternating groupings of species type can heighten aesthetic pleasure, enrich the sensory experience through a patterned diversity, and consequently improve mental health. Framed in the context of Afghanistan as a strategy of winning hearts and minds, the positive improvements of wellbeing and mental health linked to trees could be characterized as a subversive, or even as an insidious action. Different from consuming a

drug or participating in therapy, the positive mental health benefits derived from nature are less tangible. This environmental conditioning of mental states celebrated by the ASLA seems to work gradually and subtly on entire populations and short of cutting down the trees, there seem to be no strategies for resisting the effects of exposure to nature. Furthermore, trees present themselves as a cost-effective tool for large-scale environmental transformation and consequential community-wide psychological modification. This essay asks both the ASLA and the American military: do trees always function to improve environments and is improvement always betterment? In addition, is consent of a local population necessary before deploying a vegetative design intervention?

In Afghanistan alone, the American Congress appropriated \$113.1 billion from 2001 to 2015 for relief and reconstruction work. So, while the Office of Research & Analysis at the National Endowment for the Arts valued the landscape architecture market as adding \$2.3 billion dollars per year to the U.S. economy, the American tax payers have been spending \$8.1 billion dollars yearly on relief and reconstruction in Afghanistan.¹⁷ As the American military continues to plant trees in active and post-conflict war zones, it is important to ask what, if any, is our obligation to contribute our expertise in environmental design to vulnerable nations suffering a loss of nature. A difference of nationality or a cultural divide should not outright excuse inaction, yet can we remain morally justified in making better what to some will be considered a deeply flawed project? And domestically, the same holds true. While designing to restore mental health and wellbeing, do we not also have the obligation to comment on the political structures in place which perpetuate this suffering and inequality? It is right to strive for a firm commitment to environmental justice, yet we must be advocates for social justice as well. Our privilege is also our obligation to act.

ENDNOTES

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