Applied 'generative space': improving health and wellbeing through your practice environment

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I am a leading international healthcare architect, based in Manchester, and an outspoken advocate for life-enhancing environments. During my career, of more than 40 years, I founded the annual Healthcare Facilities Symposium – now in its 23rd year – as well as The Center for Health Design, founded in 1992. In recognition of these accomplishments, in 1998 Harvard University awarded me the Loeb Fellowship in Advanced Environmental Studies. In 1999, I founded The CARITAS Project, where I continue to serve as chief executive.

Summary

This article discusses 'generative space' as being the sustainable means to improve health, healthcare, and wellbeing with the environment. The article is a brief report on an advanced phase of original research, spanning seven years, being conducted in five countries by the author.

Imagine using your clinical environment to improve the health of your patients. Not only is it possible to accomplish this, it is also possible to use your environment to improve the health and wellbeing of your staff and of your overall community. This article discusses the historical background and conceptual framework, with practical examples of recent applications based upon an ongoing research project.

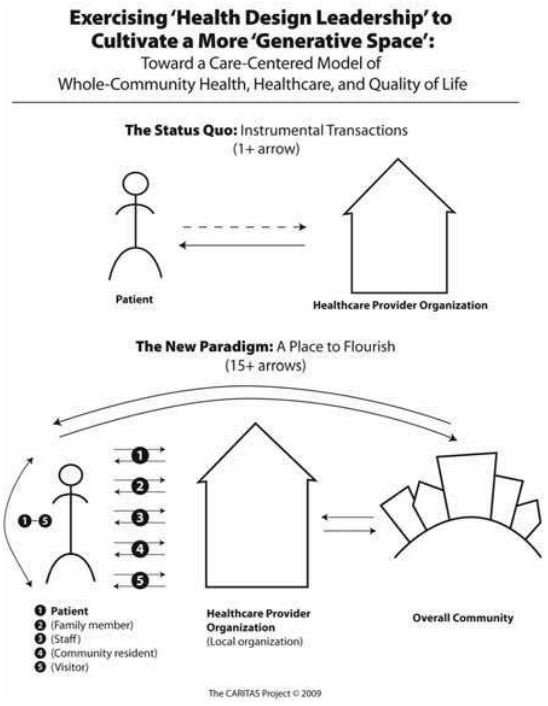
Throughout history, there have been scant examples of healthcare settings that have been recognised as having contributed to materially improving, not only the health of their associated individual patients, but also the health and wellbeing of their overall community. Fortunately, two very good examples have been well documented in the UK.

The first comes from the 1930s and 40s. The Pioneer Health Centre in Peckham, South London (www.thephf.org) is widely recognised as having sustainably improved the health and wellbeing of its patients as well as the overall community by its sensitive and strategic use of a purpose-built facility. Similarly, today in east London, the Bromley-by-Bow Healthy Living Centre (www.bbbc.org.uk) has become recognised for the intentional use of its environment as a specific life-enhancing strategy. This recognition of its success is not only based upon the improvements to individual and community health, but also for being the principal 'agent' for the social and economic regeneration of its local community. In this and the previous example the local changes attributed to the two very different centres have been sustained over time. Importantly, in both of these cases the environment has been used as an intentional strategy to increase the effectiveness of the centre in accomplishing its stated purpose.

There are many documented examples of healthcare organisations that have intentionally and strategically used the environment to support improvements in patient health outcomes. The highly influential guidance of Florence Nightingale is recognised as having given form to the 'Nightingale ward' with a lasting impact on the design of hospitals throughout the world and dramatic improvements to the patient outcomes. The key features of this ward design include access to direct natural light, fresh air breezes to cleanse the unit, and a double loaded bed configuration with a specified minimum spacing between the beds. However, unlike the earlier examples, the Nightingale ward has no direct impact on the wellbeing of their overall communities.

In Figure 1, the 'status quo' illustration suggests an example conceptually similar to the Nightingale ward – the healthcare provider organisation is successfully using its environment to improve patient outcomes. In contrast, the 'new paradigm' illustration sketches a more robust dynamic between the provider organisation and its overall community. In the 'new paradigm', the patient outcomes are also improved by the strategic and sensitive use of the environment – but the outcomes of the more extended stakeholder community are also improved.

Figure1:

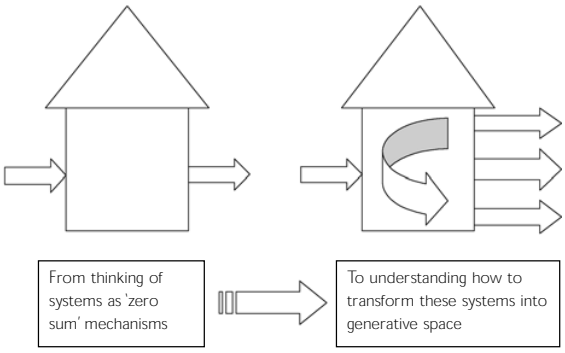


The Nightingale ward and status quo illustration represent a 'deterministic' approach to design which is quite different from the more 'developmental' character of the earlier two examples. The deterministic approach is represented by a growing literature on evidence-based design predicated on an underlying assumption that if you do 'x' environmental improvement, 'y' improved health outcome can be expected. For example, direct natural light reduces infection. The solid line and arrow in the 'status quo' illustration represent this somewhat linear and industrial type engineering aiming only for a direct improvement in patient outcomes for an episode of healthcare and not necessarily any improvement to the provider organisation.

The more developmental approach is represented by a parallel strand of literature providing evidence for using the physical environment to generate improvements in both health and wellbeing beyond the individual patient. The importance of this developmental approach lies in its potential to exceed the benefits of the deterministic approach. As already stated, it can also improve the health and wellbeing of the overall community and thereby engender progressive health improvement over time. The specific environmental strategy that enables these additional improvements to be achieved is called 'generative space', and it is based upon a more whole-systems approach to health improvement.

At a conceptual level, the benefits of this whole-systems approach are illustrated in Figure 2. The diagram on the left side suggests that the conventional approach to our own lives and organisations – or to any system – aspires to create outputs that are at least equal to the inputs. However, the diagram on the right side suggests that a very different type of scenario is possible – one where the outputs significantly exceed the inputs by multiple factors. The difference between the left and the right diagrams is the introduction of cultivating 'generative space' in the diagram on the right. In very simple terms, a 'generative space' uses design of the physical environment to provide the context for a meaningful experience of personal health and wellbeing.

Figure 2: Producing 'generative space'



A working definition of 'generative space' is provided in Figure 3. There are two characteristics of 'generative space' that make it both unique and challenging. First is the notion of intentionally developing an experiential 'place', consisting of the combination of both physical and social space. More common in mainstream practice is that the requirements for the physical environment are considered to be largely the expertise of practitioners of architecture and design, while the workings of social space are understood to be the expertise of those with training in the social sciences. Rarely, in practice, are these two disciplines integrated. The second unique and challenging characteristic of cultivating generative space is the notion that its successful outcomes are achieved as a result of practising it 'across the full range of life's contextual situations'. This notion of 'generative space' is inextricably linked to its inherently developmental nature.

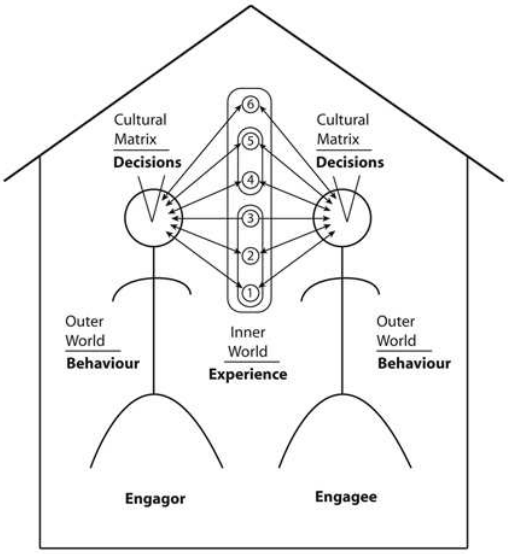
Generative space is located in the personal experience of those involved. Figure 4 provides a schematic illustration of two individuals interacting. This is precisely what happens in so much of the daily routine of health practitioners. This illustration provides a 'map' containing

Figure 3

As a means to develop a shared understanding of 'generative space', consider the following as a working definition:

- 'Generative space' is a place – both physical and social – where the experience of the participants in that place is one that both fulfills the functional requirements of that place and it also materially improves the health, healthcare, and/or quality of life for those participating in that experience in a manner that they can each articulate in their own terms.
- Additionally, and by its very nature, a 'generative space' is a place that progressively and tangibly improves over time.
- The purpose of cultivating 'generative space' is to improve performance effectiveness. Depending upon the interests of the particular individual, the organisation, or the community – the measurements of effectiveness will vary. However, in all cases, whatever these measures are – they will be used to encourage, support, and reinforce increasing performance effectiveness in health, healthcare, and/or quality of life.
- The goal of understanding how to cultivate 'generative space' is to be able to produce it consistently, reliably, and predictably across the full range of life's contextual situations – including:
  - our personal lives
  - our professional and organisational work
  - throughout the vast spectrum of our community engagements.

Figure 4: The 'six conditions of space'



Social Space Only:
1 = Engaging with the other person only
2 = Engaging with the person plus what the other person represents
3 = Engaging actively with the social space

Physical Space Only:
4 = Engaging with the physical space only
5 = Engaging with the physical space plus what the physical space represents

Integrated, Simultaneous, Generative Social Space and Physical Space:
6 = Engaging with the spatiality (all six conditions simultaneously)

two important notions. First is the distinguishing of six possible conditions of space – physical space, social space, and the two combined. It is the result of this key distinction that the possibility of cultivating a generative space emerges. The second notion distinguishes the linkage between experience, decision, and behaviour – all related to qualities of the space that an interaction produces. The logic follows that if we aspire to improve health we must produce experiences that engender the health behaviours that correspond with our sustainable health improvement strategy.

The specific usage of the word 'cultivate' is crucial to understanding the very source of generative space. For example, if we want to eat corn for dinner tonight, it is unlikely that planting seeds after breakfast this morning will allow us to achieve our goal. Similarly, at least without the benefit of sustained personal practice, it would not be likely that we could cultivate a generative space in our very next interaction. The sustained ability to cultivate generative space requires a situated and fluid mutual engagement, uniquely tailored to the specific context and always emergent. In other words the generative space requires physical and human ingredients which combine in creative ways not predictable in advance.

All generative space is situated within a physical environment, as the outline around Figure 4 indicates. Therefore, it follows that the specific qualities of the physical environment must be very carefully chosen to support and reinforce the values that the organization/practitioner hopes will underpin their patient experience in that space. The same is true for the qualities of the social space. In both of these cases, these experiential qualities convey crucially important messages to the patient, and these messages have a direct impact upon the effectiveness of the health practitioner, the performance of the provider organization, and the health outcomes for the extended community of stakeholders.

These findings are the result of original research being conducted by The CARITAS Project (www.thecaritasproject.info). Specifically, the *Leading by design* research project, within the portfolio of The CARITAS Project, has been working to develop a better understanding of how the environment can be used to systemically and sustainably improve health and wellbeing across all provider types, locations, or patient conditions.

During the past seven years since this phase of the investigation began:

- a developmental framework consisting of 22 operational themes has been established
- these research findings have been validated through an extensive and ongoing international peer review process
- generative space has been successfully put into practice in a wide variety of health and health-related settings around the globe.

Currently, the *Leading by design* project is working with 10 active case studies in five countries including England,

Scotland, and Ireland. This research uses an action research paradigm with a reflective methodology. Each one of the participants serves as an individual case study and is responsible for documenting the results of their own inquiry into learning how to effectively cultivate a more generative space.

An important assumption underlying this case study approach is that generative space is the product of the experience of interaction and that it is the interaction with other human beings in the context of a physical environment that most meaningfully informs the health outcomes. Fundamentally, the experiential qualities of the physical environment are not merely a background for this interaction, rather they are an *integrated component of this dynamic experience*. Any attempt to separate either the physical space or the social space from the generative space will neuter the developmental experience and render it – at best – a deterministic solution. The case study approach is, therefore, a method that supports the individual learning of each participant through the direct consequences of their own experiences.

This case study approach, focusing on the learning of the individual *Leading by design* participant, uses the health setting as one of many of 'life's contextual situations' to serve as the classroom for their learning and personal practice. Since each of these participants work within an organisation, the ultimate challenge and opportunity for each participant is to inform the operations of their overall organisation with learning about cultivating generative space. As each participant becomes increasingly more effective in their own attempts to cultivate generative space, and to inform the operations of their organisation with this learning, the qualities of this generative space will extend into the experience of the overall community. In other words, generative space can become infectious as has been found in the Pioneer Health Centre, and in Bromley-by-Bow. This is the ultimate challenge for the *Leading by design* research project participants, as the 'new paradigm' illustration in Figure 1 indicates.

Currently, several *Leading by design* participants are actively developing projects that aspire toward the fullest possible realisation of cultivating generative space.

The Waterford Health Park was opened in May, 2009 by Dr Mark Rowe (www.whp.ie). He is interested in documenting the improvements in health within the overall community that could be attributed to the addition of this park to Waterford. Consequently, an epidemiological study was commissioned to establish a 'before' baseline statistical snapshot of community health and wellbeing, so that future snapshots can be used to determine whether an improvement has happened and if the improvements are, in fact, both systemic and sustainable. Consistent with the action research methodology that frames the overall *Leading by design* project, Dr Rowe's ongoing measurement and documentation exercise is all in the service of the more significant purpose of continuous learning, so that this process of learning will inform subsequent improvements.

In the UK, Simon Henderson is another *Leading by design* research participant. In January, 2010, Macmillan Cancer Support launched the *Macmillan Quality Environment Mark* to raise the bar in cancer care environments and to promote the active cultivating of a more generative space. Simon developed this project to systemically and sustainably improve the health and wellbeing of those individuals who are touched by the experience of cancer. By its very nature, this project is predicated upon a whole-systems developmental approach that links together the provider organisation, stakeholders, and the overall community into a network based on the 'new paradigm' sketch in Figure 1. (Resource material can be found on the *Cancer Environments* section of www.macmillan.org.uk under the heading of *Macmillan Quality Environment Mark*).

In February, 2010, the CARITAS Project launched a new international award programme to identify those provider organisations that are using the environment to systemically and sustainably improve the health and well-being of their stakeholders and overall community. This award will be used to accelerate the emergence of this new paradigm into mainstream health practice by assembling a new body of evidence that demonstrates the practical benefits of cultivating generative space. Information about this award is available on www.aplacetoflourish.net. Other resource material can be found on the *Leading by design* link on www.thecaritasproject.info under the *Case Studies* section of *Tama Duffy Day*, the healthcare interior design practice leader of a leading international architectural firm, who describes her approach to cultivating generative space in the planning, design, construction, and operations of a significant health clinic in the USA.

That history provides so few examples of such systemic and sustainable health improvement approaches speaks to the challenge that such an enterprise faces. Indeed, the very structures that have been put in place to improve health and wellbeing are much more focused on medical and science-oriented technologies as strategies for improvement, than the use of space or even developmental learning. Nevertheless, seven years of ongoing *Leading by design* research and 10 active international case studies are beginning to provide a body of evidence in support of a new, cost-effective approach to improving health and wellbeing by more effectively utilising those elements of practice that are already in place – the physical space and social space including elements such as interactions, experience, action-oriented learning, behaviours, and outcomes. The growing body of generative space practitioners, who are learning how to cultivate generative space by more effectively integrating the physical and social space, are demonstrating how to encourage health practitioners and their respective organisations to produce improved outcomes that are both systemic and sustainable for both the health and wellbeing of individual patients as well as their overall communities.