Making Permaculture Stronger

by collaboratively identifying and addressing its weaknesses.

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Christopher Alexander's Neglected Challenge to Permaculture

Posted on May 8, 2016 by Dan Palmer / 33 Comments

Consider the opening statements of what are possibly the two most prominent definitions of permaculture:

> *Permaculture (permanent agriculture) is the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems (Bill Mollison, 1988, p. ix)*

> *A more current definition of permaculture, which reflects the expansion of focus implicit in Permaculture One, is "Consciously designed landscapes, which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs" (cited by David Holmgren, 2002, p. xix)*[1]

These two statements share three key parts. One is the goal of systems or landscapes that have the character of nature in the sense they replicate, mimic, and in a very real sense actually are natural ecosystems. The second is that these target systems produce for human needs. The third is moving toward this goal via conscious design.[2]

Let us focus in on this last part – *conscious design*. As the key method or process given for approaching its desired destination, you would expect permaculture to contain a clear definition of what *conscious design* is.

By and large the permaculture design literature defines design as a process of combining

elements into systems. The wording changes, but the core idea remains that:

1. the elements exist prior to their connection, and
2. the crux of design is joining, assembling, or integrating these elements (into systems, patterns or wholes delivering on the permaculture principles).

Perusing the seminal literature, I first find this core idea clearly in Mollison's *Permaculture*: A *Designers' Manual* (1988, note that I have added all bold text in this entire post to emphasis particularly relevant words and phrases):

> "**Permaculture, as a design system, attempts to integrate** fabricated, natural, spatial, temporal, social and ethical **parts** (components) **to achieve a whole.**" (p. 36)
>
> "It is in the **arrangement of parts** that design has its being and function…" (p. 36)
>
> "Permaculture design is a system of **assembling** conceptual, material, and strategic **components in a pattern** which seeks to benefit life in all its forms." (p. 36)
>
> "The design [is] '**a beneficial assembly of components…**" (p. 37)
>
> "For the final act of the designer, **once components have been assembled**, is to **make a sensible pattern assembly of the whole.**" (p. 70)[3]

This core idea has been accepted and repeated right up to the most recent books on permaculture design. In their *Practical Permaculture* (2015), Jessi Bloom and Dave Boehnlein share prevailing permaculture understandings of the words *element* and *system*. In defining these words and their relations, they explain:

> "In its simplest form, a system is a **bunch of parts (elements) arranged** such that their relationship to one another (their function) allows some sort of job to get done or goal to be accomplished (purpose). For instance, a bicycle is a simple system composed of a **bunch of elements** (handlebars, chain, wheels and so forth) **put together** in such a way (handlebars connected to frame, frame connected to wheels) that they function to accomplish the purpose of transportation. We can see the same concept when looking at the parts of the human body. A pile of organs sitting on a table does not make a person. However, when those organs relate to each other in just the right way and each performs its functions, *we* are the result.
>
> When all the **elements of a system come together** in the right way, the whole becomes more than the sum of its parts and emergent properties appear" (p. 18)

Later in the book, they apply this interpretation of systems thinking to permaculture design process:

> "The **permaculture design process is about assembling components... into mutually beneficial relationships. Elements** can be **placed** in a number of different **arrangements**, but **the connections** made **between them** is what **builds systems** that work effectively" (p. 59)
>
> "Every **element** in your design should be analysed in order to figure out the best relative location to **create beneficial relationships with other elements**" (p. 92)
>
> "The **placement** of **elements** in **relationship** to each other is critical to creating a functional permaculture design" (p. 99)

Let us consider one more example. In *The Permaculture City* (2015), acclaimed permaculture author Toby Hemenway explains that permaculture "offers a set of design principles for *creating useful relationships* that guide us in formulating our plans, and a host of *connection-building design methods* that help us decide which techniques to use to implement those plans" (p. 23). As he explains, "permaculture, not surprisingly, leans heavily on methods that focus on *creating relationships among the parts* **of a design**" (p. 31). He then fleshes out four of these methods, "each a powerful method for doing what is at the heart of permaculture design: **creating connections and relationships among the parts of a design**..." (p. 31). Here are his one-sentence summaries of these four methods (pp. 33-44):

> "Highest use tells us how to **connect design elements** or activities in time by linking their functions or uses in a sequence. It tells us what to do first."
>
> "Needs and resources analysis tells us how to **connect the parts of a design to one another**."
>
> "The zone system **organizes the parts of the design** in relation to the user or center of use."
>
> "Sector analysis **organizes design elements into useful relationships** with outside influences that we cannot directly affect."

The above quotes are representative of almost all published treatments of permaculture design. I think it is fair to say, then, that they are therefore representative of how permaculture designers in general talk about (and thus think, teach, and practice) design.

We can put this core understanding into a table. We have just seen evidence that the permaculture design literature generates sentences about what design is via the formula of selecting an item from each of these three columns and stringing them together:

start with	**then**	**them to form a**
elements	assemble	whole
parts	connect	system

components	integrate	pattern
things	relate	assembly
	join	plan
	arrange	design
	place	relationship
	locate	
	organize	
	create relationships between	

Integrating elements into **patterns**, **connecting components** into **whole systems**, **organising parts** into **relationship**, and so on, are all different expressions of permaculture's unambiguously dominant understanding of what permaculture design *is*.

Christopher Alexander's Challenge

Christopher Alexander is a radical architect, builder and writer widely known and respected by permaculture practitioners. Indeed, Alexander's work is referenced in high esteem by the authors of the three books just cited.

A core theme in the 14 plus books Alexander has published over the last half-century is a critique of the idea of design as element assembly. Here are two representative excerpts from earlier and later in his career:

> "*Design is often thought of as a process of synthesis, a process of putting together things, a process of combination.*
>
> According to this view, a whole is created by putting together parts. The parts come first: and the form of the whole comes second.
>
> *But it is impossible to form anything which has the character of nature by adding preformed parts*" (Alexander, 1979, p. 368)

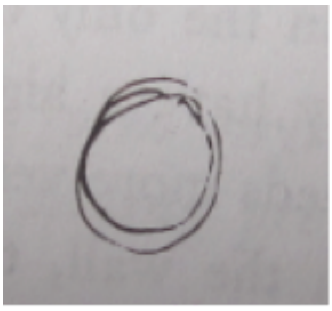
…then, 33 years later:

> "To grasp the nature of the subtle structure [of wholeness] fully, we must learn to avoid the

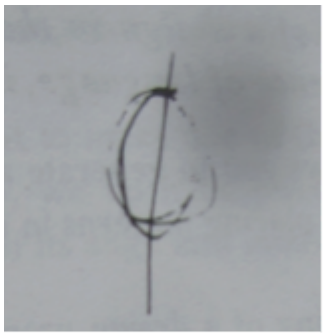
> danger of trying to see [wholes][4] made up of parts. Present-day conventional wisdom (perhaps Cartesian and mechanistic in origin) tells us that everything is made of parts. In particular, people believe today that every whole is made of parts. The key aspect of this belief is the idea that the parts come 'before' the whole, in short, the parts exist as elements of some kind, which are then brought into relationship with one another, or combined, and a [whole] is 'created' out of these parts and their combinations as a result.
>
> I believe accurate understanding of wholeness is quite different." (Alexander, 2002a, p. 86)

Now consider this statement, which starts to clarify what he means by *quite different:*

> *"This [approach to design] is a differentiating process.*
>
> It views design as a sequence of acts of complexification; structure is injected into the whole by operating on the whole and crinkling it, not by adding little parts to one another. In the process of differentiation, the whole gives birth to its parts: the parts appear as folds in a cloth of three dimensional space which is gradually crinkled. The form of the whole, and the parts, come into being simultaneously.
>
> *The image of the differentiating process is the growth of an embryo.*
>
> It starts as a single cell. The cell grows into a ball of cells. Then, through a series of differentiations, each building on the last, the structure becomes more and more complex, until a finished human being is formed.
>
> The first thing that happens is that this ball gets an inside, a middle layer, and an outside: the endoderm, mesoderm, and ectoderm, which will later turn into skeleton, flesh, and skin, respectively.



> Then this ball of cells with three layers gets an axis. The axis is laid down in the endoderm, and will become the spine of the finished person.



Then this ball, with an axis, gets a head at one end.

Later, the secondary structures, eyes, limbs, develop in relation to the spinal axis and the head.

And so on. At every stage of development, new structure is laid down, on the basis of the structure which has been laid down so far. The process of development is, in essence, a sequence of operations, each one of which differentiates the structure which has been laid down by the previous operations" (Alexander, 1979, p. 370-371)

So how might this apply in practice to a given design process? As Alexander then explains:

"At the beginning of a design process, you may have an idea that the open space should be 'more or less over here,' and the building 'more or less over there.' Neither the pattern for

> 'open space' nor the pattern for 'building' is very precisely defined at this stage. They are like two clouds, whose size is imprecise, and with imprecise edges. It is not even perfectly certain, at this stage, that the cloud called 'open space' will be entirely open—nor that the cloud called building will be entirely roofed. What is happening, is that you place these two clouds, roughly, at this stage of the design, with the full understanding that the design is accurate only to within the order of magnitude of the clouds themselves, and that all kinds of details which are smaller in scale, may be changed later.
>
> Later in the process, you may be placing the 'entrance' to the building. Again, the pattern which you call the entrance is a cloudy volume, about the right size, clear enough so that you can pin point its location, with respect to other larger clouds, and to show its relations to the things next to it, but no more exact than that.
>
> And, yet another stage in the design process, you may place a column. This column has a height, and a rough size—but again, at the time you place it first, it has little more. Later, you make the column more exact, by placing the edges of the column, its reinforcing bars, its foundation, and so on.
>
> Whenever we want to make one of these vague cloudy patterns more precise, we do it by placing other smaller patterns, which define its edge and interior.
>
> *Each pattern is an operator which differentiates space: that is it creates distinctions where no distinction was before* (Alexander, 1979, p. 372-373)

I find it curious that permaculture authors (including those cited above) don't acknowledge Alexander's critique of their core understanding of design,[5] not to mention his extensively documented and detailed attempts to flesh out and apply his alternative understanding.[6]

Don't these seem like worthwhile ideas to explore and try out? The idea of design as a differentiating process? The idea of design as a program or sequence of injecting structure into a whole, moving from larger wholes toward smaller wholes? The idea that each smaller whole is placed, shaped, oriented and sized according to its relation to the wholes it sits within, and the wholes that surround it and overlap with it? Indeed, how else are we supposed to *design from patterns to details*?[7]

Same End, Different Means

As it happens, Alexander's approach and the permaculture approach agree on the end they are aiming for. Compare Alexander's…

> "…it is important that we, as a people on Earth, learn to create our towns, buildings and landscapes so that they too – like nature – are living structures, and that so our artificial

world is then a nature-like system" (Alexander, 2002b, p. xvi)

…with the two definitions of permaculture this article started with.

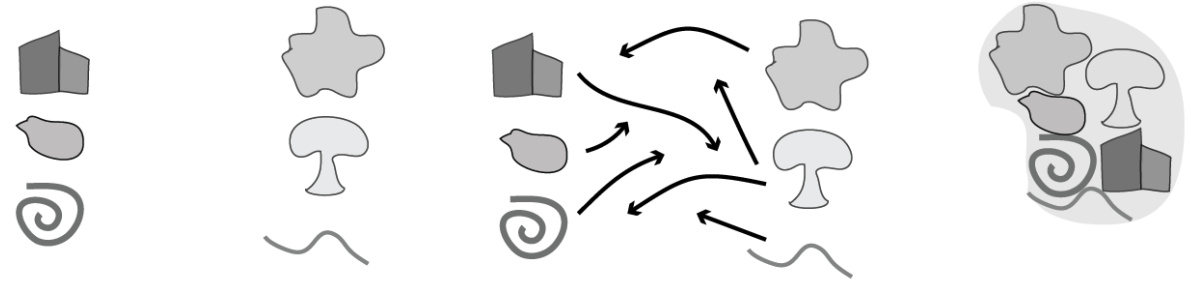
While permaculture focuses more on the agricultural productivity of such systems and Alexander more on the built environment[8], there is a common striving toward landscapes or systems with deep natural character (i.e., that "mimic the patterns and relationships found in nature" in the statement from Holmgren, or that are "living structures" in Alexander's).

Going further, both Alexander and permaculture share the contention that we can only approach such systems through a process of conscious design.

The two approaches part company, however, when it comes to specifying the essence of this process – the means to the end.

For permaculture, systems and landscapes with the character of nature are to be achieved by a process of assembling or combining parts or elements into whole systems:[9]

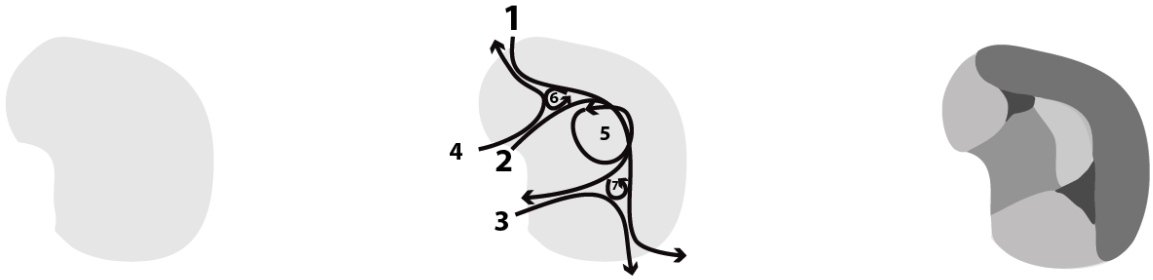
Permaculture's Default Design Approach



a. Start with elements (parts)... **b. Assemble them...** **c. Into a whole...**

For Alexander, systems and landscapes with the character of nature are achieved by a process of differentiating wholes into parts, as inspired by the process by which an organism comes into existence:[10]

Christopher Alexander's Default Design Approach



a. Start with a whole... **b. Differentiate it...** **c. Into parts...**

Summary & Conclusion

Permaculturalists have formulated principles and patterns intended to capture key aspects of healthy natural ecosystems. They have then attempted to mimic these principles and patterns in the systems they design.

Details aside, a common theme to how design is defined in the permaculture literature is as a process of element assembly.

This is a process of starting with parts then creating wholes by *addition*.

Christopher Alexander argues that if we want to mimic the patterns and relationships found in nature, we *must* understand and copy the patterns and relationships *inside the process* by which nature produces these patterns. We need to mimic the means as well as the ends.

He then proposes that the key to nature-mimicking design process is *differentiation*:

> "The key to complex adaptation… lies in the concept of differentiation. This is a process of dividing and differentiating a whole to get the parts, rather than adding parts together to *get* a whole" (Alexander, 2002b, p. 197)

This is a process of starting with wholes then creating parts by *differentiation*.

This radically different understanding of what sound design process *is* challenges a core idea in permaculture.

I encourage permaculturalists (including myself) to wholeheartedly *accept* this challenge. Let us engage with it, understand it, discuss it, try it out, reach some sort of clarity on what we make of it, and whether we see any value in it.

Further, let us not forget that this challenge comes not from someone totally outside or foreign to permaculture. A small portion of Alexander's thought and writing has already infused and enriched permaculture. Yet somehow we have missed perhaps the most important thing he has to offer us. In other words, we have *barely started* the important work of exploring and assimilating the riches he has to offer. I for one *can't wait* to see where his thinking takes us next.

In conclusion, permaculture is defined as a process of *consciously* designing agriculturally productive, nature-mimicking landscapes. *Conscious* design implies *consciously* questioning our understandings of what design is, and where necessary, making improvements. In Alexander's work, we find somebody we already like showing us a way forward.

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Acknowledgements

I thank David Holmgren, Dave Jacke, Rosemary Morrow, and James Andrews for their supportive and insightful feedback on an earlier draft of this post.

Endnotes

1. Shortly after this statement, which is Holmgren's summary of a definition in wide use by permaculture teachers in the 1990s, he goes on to explain that "For many people, myself included, the above conception of permaculture is so global in its scope that its usefulness is reduced. More precisely, I see permaculture as **the use of systems thinking and design principles that provide the organising framework for implementing the above vision**." ↵
2. Mollison adds mention of maintaining the system once designed and implemented. ↵
3. The sequence here is unambiguous – 1. components, 2. their assembly 3. pattern assembly of the whole. Start with details and move toward patterns. ↵
4. Here I have replaced Alexander's preferred word "center" with the more familiar word "whole" which comes closest to his meaning – but see Alexander (2002a) pp. 83-85 for an explanation as to why he prefers the word "center" ↵
5. See for example *The Timeless Way of Building* (1979), *A Pattern Language* (1977), *The Nature of Order – Book One – The Phenomenon of Life* (2002a) ↵
6. Which is the common thread of his entire written corpus ↵
7. Interestingly in the chapter exploring his *design from patterns to details* principle Holmgren (2002) cites Christopher Alexander's (1977) work on pattern languages as an inspiration for focusing the chapter on steps toward a pattern language for permaculture site design. Yet as is the case with all other permaculture references to Alexander I am aware of, Alexander's underlying concern with healthy design process as itself a patterns-to-details or whole-to-parts sequence of differentiations is not discussed ↵
8. Though keep in mind that in the very next sentence after the definition of permaculture

Holmgren cites (see the start of this post) he continues to say "People, their buildings and the ways they organize themselves are central to permaculture" (2002, p. xix). ↵

9. I haven't found mention of an inspiration for this approach in the permaculture literature, as in an indication as to *why* this particular approach was chosen as the dominant or default approach. As best I can tell this approach was plucked out of the cultural milieu by Bill Mollison, equated with permaculture design, and subsequently accepted and propagated throughout the permaculture literature ever since ↵
10. While my focus here is to clarify the distinction between these two approaches to design, which are at first glance mutually exclusive, in a future post I'll flesh out the fact that working from parts towards wholes via addition *has its place*. It becomes problematic when we (unconsciously or otherwise) let it *dominate* our approach to design. Like Alexander, I believe that if anything its place should be secondary and subordinate to working from wholes towards parts via differentiation, if, that is, we desire to mimic the way natural processes generate natural systems. But my main point is that it is not a case of *either-or* but (yet again) a case of *both-and*. In a healthy, holistic design process the two approaches exist in a complementary dance (where the whole-to-parts approach leads the dance). ↵

Dan Palmer

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33 Comments

lilian ricaud
August 2, 2016 at 2:03 am

Hi Dan,

I'm currently exploring your site, thanks for for sharing these insights !

You might be interested by this article I wroteaboutn how permaculture and Alexander's approach have strong similarities and represent a new way of designing whole systems:

Permaculture Patterning, a design framework for systemic transformation https://www.academia.edu/14083615/Permaculture_Patterning_a_design_framework_for_systemic_transformation

Will Hooker
July 28, 2016 at 4:15 am

Thank you, Dan, for this article and your replies to the various contributors.

I am a landscape architect and taught small scale landscape design in a department of horticulture for 35 years. In the mid 90's I became concerned about where our world (specifically led by our design professions) was headed, and in searching for answer, I found the 'umbrella' of permaculture. I became certified in 1994, began teaching and introductory Pc course at my university in 1997, and in 1999-2000, I took a year-long sabbatical study leave to travel around the world in an effort to better learn what permaculture was really all about. In the course of my travels, I visited eleven nations, around 250 separate sites, out of which around half were pure permaculturally designed residences and institutions. Of the 125 Pc places, I counted only five of them as being what I considered to be beautiful/inspiring. As one practitioner I visited (who happened to have one of the five beautiful sites) stated, "Permaculture aesthetics suck!" Unfortunately, I have had to agree.

For years, I rationalized this as relating to new permaculture converts moving too quickly – these folks got excited about permaculture, dropped everything in their lives, bought a piece of land, and immediately built a shelter, planted a garden, put in fruit trees/water catchment/herb spirals/etc., and all in a very abbreviated time frame. Their designs/arrangements were/are not thoughtful or inspired, but simply a result of an attitude that said, "Let's get this done quickly because we have to live here as well as live off the land." I now think that your's and Alexander's discussions give a deeper meaning to what is behind poor permaculture design.

I think part of the problem is that a typical PDC does not adequately prepare its graduates to actually do good design. Having been a teacher of design for decades (where I used Christopher Alexander's books as texts), it became clear to me that even an intensive 2-4 years of studying a set of courses covering the basics of reading and designing the land is not sufficient to create good designers. It takes a good deal of experience, and on one's own land, that it best learned by going slow. Mollison's and Holmgren's advice, i.e., "Start at your doorstep," rings very true. Unfortunately this can often lead to aggregation rather than differentiation, even for the best designers among us.

I am gathering a group of local permaculture and landscape designers whom I trust to continue a conversation on permaculture design based initially on your's and Alexander's articles. I believe that it is critically important that permacuture designs become beautiful. I agree with Toby Hemenway in that we are a young discipline, and that it will take time and the evolution of our teaching in making permaculture design beautiful, inspiring, and to borrow Alexander's word from "A Timeless Way of

Building," alive.

Again, thank you, Dan, for your work and inspiration on this topic.

Dan Palmer ★
July 28, 2016 at 2:51 pm

Thanks so much Will. Wow – you found just 5 out of 125 self-identified pure permaculture sites beautiful / inspiring. This mirrors my experience (though your sample size is probably a bit larger) and is as good an articulation of the 'permaculture design process' problem as any. I think it a great shame that permaculture has become a poster child advertising the poverty of the false rift between function and beauty. I agree that it is not an accident – but a necessary consequence of deficiencies in how permaculture design process has been understood, taught, and practiced (where it hasn't been *completely* neglected in favour of the cookie cutters). Musing on this I was moved to hunt down a comment of Alexander's I can't help but share (I also couldn't help replace 'architecture' with 'permaculture'):

"During the 20th century, the possibility of finding ways of designing or thinking about beauty and function in one breath seemed remote and unattainable. It was not possible, intellectually, because we could not think our way into a unitary frame of mind where the two could be fused, unified, in works of beauty which worked profoundly well. … But within the view of order which I put forward in this book it is possible, in principle, to unify these two broken halves. It is possible to think of [permaculture] in a single way where beauty and function – both contributing to life – can be understood as a single unbroken whole" (Christopher Alexander, *The Nature of Order*, Book One, 2002, p. 405)

In my own experiments (and in one single property I found by accident where a standard permaculture design process had been departed from in favour of a more deeply sound design process) I have started to taste the profound results of a design process operating on a deeper level than either function or beauty and from which both inevitably flow. This is the world I want to live in. As I like to ask people, "is a tree beautiful or functional?"

Anyways thanks again Will and I'm so excited to hear of the conversations you're starting in your part of the world – I'll spend this weekend in similar conversations with colleagues here in New Zealand. I'd love to stay in touch and for these different conversations to find ways of tapping into and supporting each other (indeed this is part of where I hope the MPS site will evolve). The potential that such conversations have to inject/re-inject life, beauty and wholeness into permaculture via living design process – it just blows my mind.

Will Hooker

July 30, 2016 at 5:16 am

Hi, Dan. Yes, I too would like to keep in touch. My email address is will_hooker@me.com.

Of possible interest to you, the most beautiful place that my wife, my son, and I visited on our around-the-world adventure was Joe Polaischer's Rainbow Valley Farm outside of Wakworth, NZ. Joe, from Austria, was a furniture designer and builder so design thinking was elemental to his thinking. He made the statement when we visited that having lived in Africa, he could be comfortable with 'fuzzy' landscapes, but since he was trying to promote permaculture as a method to help save the world, that he felt compelled to make his place as beautiful as possible and to maintain well to keep that essence.

The other four places that we visited that I consider to be beautiful were Penny Livingston's original N. California Permaculture Institute north of San Francisco, David Holmgren's home in Hepburn Springs, AU, Linda Garland's Environmental Bamboo Foundation in Ubud, Bali, and the Sans Souci Inn in Pohara, Takaka Golden Bay, NZ.

Keep the thoughts rolling, Dan. Thanks.

Kate Pospisil
July 14, 2016 at 6:14 pm

Thanks Dan for this fantastic work and the discussions thus far. I have been grappling with these ideas about design and permaculture for a long time. As a landscape architect I think I have always designed by differentiation of the whole. I see the process as the relationships and the connections that exist first. At the macro scale initially and then into more detail. This is why I often comment that a bubble diagram is not a concept plan, but a tool in the design process. I have also always found the terminology of permaculture (words like 'elements' and terms like 'functional analysis') a bit foreign and difficult to connect with how I design. Words and language are important so I think your inkling has legs!

Dan Palmer ★
July 14, 2016 at 10:41 pm

Thanks so much Kate and that's helpful to hear how the differentiation-centric approach aligns with your actual experience of designing. The more I explore this stuff, the more I agree it has legs. Legs, arms, the whole beautiful lot!

Drew Dawson
July 10, 2016 at 1:30 am

Dan, very thoughtful article. Having thought about your piece I was prompted to suggest a simple perhaps alternative view.

In my mind permaculture design as with other styles will involve the assembly of elements. Every act of complexification involves this at some level. A gene assembles a protein from amino acids, a molecule is assembled from elemental atoms, atoms from sub-atomic particles etc et ad nauseam.

What I think differentiates different schools of designs are the principles that shape the connection between elements. In permaculture I can see a set of principles to which the design conforms and give it a 'Permie' feel. For example, are the outputs of the system also inputs to another system? Does this 'cycle operate as locally as possible. Are functions stacked? Does the process reduce energy expenditure to a minimum? Can you view the problem as a solution etc.

It may be possible to avoid the debate above re 'PC design' by looking merely at the extent to which a design conforms as closely as possible to the permaculture principles rather than discussing the nuance of different authors language re elements and relationships.

I think the issue for us is that natural design seems 'principled' but it may only be vis-a-vis the laws of thermodynamics, selective reproductive advantage and parsimony. Much of the rest is more value laden than is common in 'nature'.

The other point I would make is that design as a human pursuit is fundamentally different to design as a natural evolutionary process. Evolution (except for the religious fundamentalists). Evolution does not require consciousness, is not purposive and is a seriously slow process with a very high error rate. Conscious design as undertaken by the human species is almost the antithesis of that. Bio mimicry and the copy of 'nature' is fraught for us poor humans as it can only ever be done within the constraints of our current understanding of nature which can only ever be partial and, unfortunately, rapidly changing. Just think how our understanding of nature and our relationship to it has changed over the last 500 years – a mere blink in the evolutionary time scale.

Dan Palmer ★
July 11, 2016 at 10:12 pm

Thanks for your equally thoughtful comment Drew – I really appreciate you sharing these reflections for myself and others to reflect on. One quick observation is that you start by stating your preference for the element-assembly (mechanistic) paradigm, which you consider self-evident. Alexander starts with a preference for a different paradigm, based on a totally different set of assumptions about the nature of reality. This is not to suggest that either paradigm is right or

wrong, just that they are different, and it is not really a fruitful strategy to reduce one to the other and only then contrast them.

Jason Gerhardt
June 30, 2016 at 5:51 pm

Dan, great article! I think Alexander's work certainly needs to be taken far more seriously by permaculture practitioners. By and large in the permaculture field, the pattern language concept has been borrowed from Alexander as an insufficient substitute for designing from wholeness. I think one key differentiation that we need to make in order to practice Alexander's wholeness is WE have to become as whole as nature itself. This is the work of not thinking like nature, but thinking as nature. I think it was Penny Livingston who said, we are nature working, as opposed to Mollison's work with nature. I want to second the work of Joel Glanzberg and Regenesis Group. Since I started teaching with Joel several years ago he radically shifted how I view my work, permaculture, and life in general, and continues to. He is writing a book called Pattern Mind. In an early draft of the book Joel describes the PDC primarily as an educational tool to achieve a greater wholeness of mind over anything else. I'd say that has been missing in a lot of PDC's, permaculture literature, and discussions. Lastly, I often wonder whether permaculturists are notoriously bad at describing their work well because at some point words just go in circles and can't quite describe the truth of the experience of designing in wholeness, which I'll suggest is a different state of mind than our normal discursive, logical, form grasping mind. It's like trying to describe states of meditation. They are to be experienced, not described. As Toby said in his comment, I agree that many permaculturists are practicing that different-state-of-mind-kind-of-design, but can't quite put it in the right words. Keep writing, Dan. It's great to see this level of inquiry.

Dan Palmer ★
July 4, 2016 at 11:07 am

Thanks so much for your comment Jason. I'm stoked you mention Joel Glanzberg and Regensis for as fate would have it, it seems I'll be spending several days with Joel and Bill Read who are visiting my area in NZ in two months! I have a feeling that encounter will prompt some major breakthroughs in my approach to all this. But everything you say resonates and I appreciate your affirmation – I am just getting started here and cannot say how excited I am about where this is all heading.

Chris Vernon
June 14, 2016 at 3:14 pm

Dan, fantastic stuff! I'm really enjoying the new project and am proud to see the direction you are taking it!

As for the topic, differentiation requires the designer to be so much more patient and attuned than assembly. It is no surprise we want to 'solve' the problem by assembling parts rather than tease out and toy with the whole.

Dan Palmer ★
June 15, 2016 at 11:09 am

Thanks Chris and right on!

Toby Hemenway
June 4, 2016 at 5:47 am

Excellent article. I think Alexander's concept is much closer to how permaculturists actually design, by starting with something that is already a whole and then differentiating and integrating additional factors into it. The issue is mostly that our language has not caught up to our practice–it has taken Western science close to 500 years to more accurately describe how science is actually done (Popper and Kuhn, for example). We thought it was done by the hypothetical-deductive process for centuries, as it is such a tidy model, but that turns out not to be how science is practiced at the bench and in the field. So I'm not surprised that permaculture is taking a few decades to figure out what we do in practice. Thinking in terms of relationships and organic wholes rather than collections of parts is foreign to our culture and not easy for anyone from Western culture to do. This article should speed that process. Now, if only someone would develop a methodology that shows how one can do what Alexander is suggesting, because Pattern Language and his other books still describe the process as design by accretion of parts, not as differentiation. Thanks, Dan, for the inspiration. I always enjoy revising my thinking to more accurately bring theory and practice into better congruency.

Dan Palmer ★
June 8, 2016 at 9:07 am

Thanks so much for your comment Toby. I really appreciate your open attitude here – in particular to the ongoing evolution in what we say we do when designing, what we actually do when designing, and the gradual and hopefully never-ending closing of any gap between the two. Your interpretation of Alexander's writing as not leaving the mould he is critiquing (and developing an alternative to)

fascinates me – so far I have found book two of Nature of Order his most compelling, complete and explicit outline of designing/creating from wholes to parts (or from wholes to more nuanced wholes might be a better description) via distinction – I'm curious (if admittedly somewhat skeptical!) to go back and see if it would even be possible to interpret what he says there from a parts-accretion or element-assembly view. But I could not agree more that someone needs to show how his method can be applied to permaculture design – any volunteers/takers out there? Some colleagues and I have made a tiny (but most promising!) start in this direction an we would love to widen the web of collaboration.

Toby Hemenway
June 10, 2016 at 5:20 am

Thanks, Dan. And I'm decidedly grateful that you wrote that post. Most permaculturists are interested primarily in, to quote Jack Spirko, "getting shit done" and don't spend much time thinking about the theory and other underpinnings. I'm glad to see when others are working on the theory and underlying ideas. Permaculture is still an epistemological mess; Mollison's original principles, for all their brilliance, were a strange hodgepodge of advice, injunctions, observations, and guesswork, written in varying tenses and voices, and of several inconsistent logical types. I know Rene Slay cleaned up some of it for the "Intro to Pc" book, but there's lots more to do. I'm fine with the highly empirical nature of permaculture—if it works, we don't always have to know why or how—but a solid theoretical basis will help us avoid, among other things, dumb mistakes, and will go a long ways toward making permaculture a bit more credible with academics, elected officials, engineers, and those in other formal design fields. Like I said, a lot of people don't care, but one of my favorite (and snarky) quotes is Heinrich Heine's remark–if you will excuse the 19th-century sexist language: "Oh, you proud men of action! You are but the unconscious hod-carriers of the men of ideas."

I look forward to browsing your blog a good bit more.

Dan Palmer ★
June 15, 2016 at 2:28 pm

Thanks again Toby and right on. I'm not sure which is worse – doing severed from thinking or thinking severed from doing – yet unless the two move forward together as mutually-enriching partners within a single larger process of inquiry, design, creation, or whatever you want to call it, then real progress will always elude us and we'll all of us (permaculturalists included) continue perpetuating destructive patterns right up to when we fall off the cliff pointing fingers at each other. I am hopeful that this project (Making Permaculture Stronger) will soon start evolving into a trusted platform for high-standard, peer-reviewed, collaborative inquiry into permaculture's foundational understandings, the

results of which will gradually weave themselves into the fields and gardens of action such that we become ever more effective at "getting shit done" in a way that steers us further and further toward life, wholeness, happiness, beauty and other such desirables, and where our unexamined theories tend less and less to shoot us in the foot. Permaculture is just another organism at a moment of choice all organisms are confronted with all the time: adapt, or die.

Goshen Watts
June 3, 2016 at 1:34 pm

I admit to feeling somewhat skeptical about this. What if the Alexander's challenge is accepted by everyone, and it turns out that I'm no longer doing permaculture?

"Design through the differentiation of wholes"
Nice short way to put it… but despite Dan's interpretations of Christopher Alexander (whom I'm yet to read, sorry), and recently an intensive course with Dave Jackie… I still don't REALLY GET what this actually means in practice.

As you point out though, the challenge appears to come out of permaculture mimicking natural systems. I'd actually refute this as being important in the DEFINITION of permaculture, and here's why:

A good permaculture design will have "Emergent Properties" of natural systems, but that doesn't have to be because you designed in order to mimic natural systems… Maybe just by designing according to permaculture principles and ethics, these properties are inherent in the design.

In particular; what about permaculture in an urban environment? These are highly managed systems, almost always with some ongoing inputs (even if they are much reduced compared to conventional design); they may not exactly mimic nature, but that doesn't mean that such designs aren't "resilient and truly sustainable".

Even David Holmgren didn't design his property 30 years ago and then sit back and watch his nature mimicking system produce; no, he's constantly intervening, tweaking and modifying the system in order to steer the tendency of nature to 'go a bit wild', into producing for human needs.

If permaculture is designing from whole's in order to mimic nature (as being part of the definition), then I'd probably have to tell many clients that "sorry, what you want me to do isn't permaculture". And this risks pigeonholing pc into a philosophical space of design perfection that is almost never achieved, and certainly doesn't feed the world.

To clarify something: I have no problem at all, and in fact cherish, having "differentiation of wholes, and mimicking nature" etc as being important principles that I should design to; but it doesn't, IMO define permaculture. 🙂

Dan Palmer ★
June 8, 2016 at 9:25 am

Hey Goshen and thanks for your thoughtful comment. I think that a healthy, skeptical attitude is exactly what is in order here, and I feel safe in assuring you that there is no need to worry about the chance of everyone accepting Alexander's challenge – I think that even a five percent take-up any time soon is probably wildly optimistic. As Alexander sometimes said though – give it a generation or two though and things might be different!

Ethan Roland Soloviev
June 2, 2016 at 12:58 pm

Thanks for the article – it invites a discernment & distinguishing process for us as designers which echoes the "differentiation" approach Alexander recommends.

Two groups of permaculture folks I know who are consciously working with Wholes instead of parts: 1) The firm I work with Terra Genesis International, and 2) More importantly, extensively, and comprehensively, The Regenesis Group & the Story of Place Institute.

A notable example from Regenesis is Joel Glanzberg's work on Patternmind – http://patternmind.org/

Towards wholeness,
Ethan

Dan Palmer ★
June 7, 2016 at 12:44 pm

Many thanks Ethan and I'm stoked/encouraged to hear about these two projects. Be good to connect with you to hear more about your work sometime.

Ravi V. Nathan
June 2, 2016 at 4:48 am

Thank you for this useful article. Christopher Alexander's perspective can bring to the fore elements that contribute to the aesthetics of design. I have often felt that the permaculture sites that I have seen just aren't beautiful. They may be functional but don't thrill the soul. Alexander's designs by contrast are beautiful by most people's standards and this article has helped me understand why.

Dan Palmer ★
June 7, 2016 at 12:40 pm

Thanks Ravi and indeed.

Brian Cady
June 2, 2016 at 1:21 am

Could it be that both combining and dividing approaches to elaborating systems are useful? (Thanks for starting such an interesting discussion, and starting it so well, Dan)

And is there insight into the design process within the Cabrera's 'Systems Thinking Made Simple' stream of thought?
: en.wikipedia.org/wiki/Systems_thinking
: https://www.crlab.us/
It uses a 'DSRP' process guide: Distinction – System – Relationship – Perspective. : en.wikipedia.org/wiki/DSRP

Dan Palmer ★
June 7, 2016 at 12:38 pm

Thanks for the comment Brian and I look forward to checking out Cabrera's approach which sounds a bit different from the standard definitions of systems theory as being about the emergent properties of interacting elements.

Vasko Drogriski
May 9, 2016 at 4:09 pm

A characteristic aspect of Alexander's process of differentiation, is still different to what we do in Permaculture. In permaculture we tend to 'differentiate' the elements (from their wholEs) through a rationalistic approach of recognition, (more what I would call segregation) whereas what Alexander is doing is subtly different I think. It comes from the different basic working model he uses.

Dan Palmer ★
May 11, 2016 at 11:11 am

I'm with you Vasko and look forward to teasing this distinction out more in due course. Got to get the sequence of unfolding right though!

Niva Kay
May 9, 2016 at 2:02 am

Very interesting article.
I think that you proved that the definitions of permaculture emphasis the assembly of elements. I admit have used these myself.
Yet my observation is that despite that, most permaculture designs do start in differentiation. Permaculture also emphasis observation, a good long one, long before any elements are put in the mix. When we walk on the land and when we look at a map, we start looking for boundaries, of the property, of aspects in the property. what's in and what's out. then we start layering information- sectors – here is the sunny part, here is the damp part, that's more differentiation. after that, dare I say, we look at zones, which at first are just like those clouds Christopher Alexander talks about- much before we put any elements in them, that cloud is closer to the house, this cloud is where i hardly ever go to… and on it goes with flow charts, Keylines etc.
in conclusion,
i think that we need to expand how we think about permaculutre, it's not just about assembly of elements. but that we have the materials to do so in exciting design processes. We can work on better defining them, and on getting more tools for them but the framework is already there. So basicly, yeah, by making permaculture stronger 🙂

Dan Palmer ★
May 9, 2016 at 11:17 am

Thanks so much for reading and sharing your thoughts Niva! I totally agree that despite how most of

the permaculture books (and as a result many of us) define permaculture design as element assembly, what happens in practice (as in what you see if you watch what any experienced permaculture designer actually does when designing) is at least some degree of whole-to-parts differentiation, starting in the observation phase where the whole point is to tune into the nuances of the people and the site (or whatever it is you're working with) where naturally the higher-order distinctions (patterns) reveal themselves first, and you only then move toward the finer details. Indeed what is it to 'analyse,' as in the phrase "site analysis" if not to differentiate a whole into parts. But I do think a lack of clarity about the two approaches means that often times we unconsciously default to letting the element assembly approach dominate the task of translating the client's wishlist into some sort of pattern or configuration on the ground. This leads us toward something that feels more an imposed aggregation of parts than an organically differentiated whole. So I'm also excited that this conversation is happening, where as you say the point is not as much about critiquing permaculture design as to the contrary acknowledging its value and seeking to make it even better by revisiting and firming up foundational understandings – yay!

ps. I will leave you with this thought to ponder, however. Why are we permaculturalists so attached to the word 'element,'with its rather non-holistic connotations of 'basic substance,' 'essence' and 'fundamental building block'? Merriam Webster online starts its definition of elementalism as "a tendency to postulate a separation into independent entities or elements of things…" Words are powerful things and I have an inkling permaculture is somehow shooting itself in the foot with this one.

Rural Johnny
June 2, 2016 at 9:16 am

Thanks Dan, a thought provoking article indeed.

Your PS poses a why question (why are we attached to the word 'element'). To me, the answer is a further reflection on common approaches to permaculture design – we humans are reductionist by nature and by education. That is, we prefer to reduce complex things to its simple elements so that we can gain an understanding of the complex whole. This is a bottom-up approach to design, one where we applaud the vision of people who clear-fell an area and then bring in the bulldozer to contour the land to make nature comply to the designers view of how nature should look.

I agree with your inkling that permaculture is "somehow shooting itself in the foot". Doing so, is a powerful way to (re)learn first principles and I thank you for bringing the issue to front of mind.

Dan Palmer ★

June 7, 2016 at 12:43 pm

Thanks Rural Johnny and I love your example – "just look at those beautiful earth-healing contours!"

Jo
May 30, 2016 at 2:25 pm

I agree Niva, we are gradually differentiating our 13 acres as we come to grips with what is already there and how the aspect, slope, soil, shelter, water and climate interact. Also the paths we take and places we congregate, the views we admire, and how the wildlife and pest animals use the space…

As we decide on the 'clouds' and how they broadly relate, we can work on further differentiation within them as need, time, resources and brainspace permit, following principles to ensure that elements are combined in a pleasing, efficient and effective manner.

Vasko Drogriski
May 8, 2016 at 7:27 pm

Fantastic job you're doing here Dan, teasing out the definitions/meanings/distinctions of design as assembly from 'parts' as opposed to design through the differentiation of wholes. This is a widely misunderstood aspect in permaculture, but a very important one to 'nut' out.

Dan Palmer ★
May 9, 2016 at 10:11 am

Thanks for your kind words Vasko – and right on – let the nutting begin!