A Response to Dan Palmer
No Challenge
Peter Light

Dan Palmer, in the August 2016 issue's Movement Musings entitled "Christopher Alexander—His Neglected Challenge to Permaculture," attempts to demonstrate a fundamental conflict between these two schools of thought, both of which have design at their heart. Dan believes that permaculture starts with putting components together to create a whole, while Alexander starts with the whole, out of which emerges the components. The challenge, which, it should be noted, is Dan's perception of a challenge—I am not aware of Alexander himself directly confronting permaculture's design approach—is given import due to permaculture's huge respect for the work of Christopher Alexander and his colleagues.

I don't think there is in fact any fundamental difference between permaculture's and Christopher Alexander's design approaches. It is even possible to flip Dan's contention on its head and say, "Permaculture design does not start with elements, but with the whole; Alexander does not start with the whole, but with elements."

In order to understand these two statements in light of Dan's thesis, and in order to resolve the false appearance of conflict, one must realize that there was no acknowledgement made in the article that two different "wholes" were being discussed; that no distinction was made between the creative conceptualization stage of designing, and the execution of a design; that the author continually referred to components or elements with no further information as to their nature, scale, or temporal appearance in the sequence of design; and that he fell into the trap of cherry-picking bits of permaculture and Alexander's thoughts to bolster his argument.

Let me start untangling the confusion these imprecisions have created by first looking briefly at the statements Dan makes early in his article about "the core idea" of permaculture, and then at each of the quotes from *The Designer's Manual* referenced to support them.

Dan writes, "…the permaculture literature defines design as a process of combining elements into systems," but does not specify which stage of the design process is being considered, nor the nature, size, and specificity of the components.

Next he writes: 1) "the elements exist prior to their connection." Some elements considered in permaculture design do not exist prior to their connection because they are already intrinsically connected, e.g. sun, wind, etc. Aside from these, however, it is difficult for me to image how an element could fail to exist, or more properly, perhaps, be selected, before one decides to connect them. Once again, however, the nature of the component is not made clear, nor what stage of the design process he is talking about.

And, 2) "the crux of design is joining, assembling, or integrating these elements…." Again, there is no indication of the order of joining; the nature and scale of the elements; whether they are intrinsic, pre-existing elements or introduced elements; or what part of the design process he is talking about.

Dan then backs up his statements by choosing five short quotes from the *Designer's Manual,* and even further narrows the discussion by "underlining to emphasize particularly relevant words and phrases:"

"<u>Permaculture, as a design system, attempts to integrate</u> fabricated, natural, spatial, temporal, social, and ethical parts (components) <u>to achieve a whole.</u>" Here, I think the most important parts of this sentence are the words not underlined. "[N]atural, spatial, temporal, social and ethical parts" are much more like the "clouds" that Alexander starts with than they are like swales, ponds, or mushrooms.

"It is in the <u>arrangement of parts that design has its being and function</u>" again says nothing about the nature of the parts, the process and order of assembling them, or whether we are talking about the creative conceptualization of the design or the on-ground implementation of the design.

"Permaculture design is a system of <u>assembling</u> conceptual, material, and strategic components <u>in a pattern</u> which seeks to benefit life in all its forms." " [C]onceptual… and strategic components" are far from the grossly over-simplified "Permaculture's Default Design Approach" illustrated in the article and are instead comparable to Alexander's larger primary patterns. At the same time, there is no acknowledgement as to whether this "assembling" is understood to be happening on paper or on the ground.

"The design [is] a <u>beneficial assembly of components</u>." This statement describes an end result, and not an approach to the process of design. Clearly, this describes the end result of any of Alexander's projects as well.

"For the final act of the designer, <u>once components have been assembled,</u> is to <u>make a sensible pattern assembly of the whole</u>." This quote is interesting for two reasons. First, it's not from the chapter on design, but from the chapter on patterns. If it is important to understand and design with patterns, then no component can be added on the ground until patterns are understood. This certainly seems once again to be in accord with Alexander's thinking, not in opposition to it. Second, if the final act of the designer is to make a sensible assembly of the whole, then "once the components have been assembled" must mean either "once the components have been gathered in one place," or "once the components have been assembled on paper" because one cannot first assemble components to build the finished design and then make "a sensible pattern assembly of the whole." I am not quite sure what this means for Dan's argument, but it is a confusing statement, regardless.

Dan's take on the essence of the permaculture design approach throughout his discussion is that it <u>starts</u> with all the individual components that make up a final design, as evidenced by his schematic showing a house, tree, mushroom, herb spiral, swale, and pond being assembled into a whole. His fix on Alexander's design approach, as evidenced by the bits he chooses to select, is that it starts with components that are like "clouds, whose size is imprecise, and with imprecise edges," proceeds to smaller clouds that are "about the right size, clear enough so that you can pinpoint their location with respect to other larger clouds, and to show [their] relations to the things next to [them], but no more exact than that," and ends with "all kinds of details which are smaller in scale" Unfortunately, Dan is unfairly or inaccurately juxtaposing two separate stages of

design work: the on-ground implementation of a design, in the first case; and the formulation of a design in head and on paper, in the second case. This faulty comparison mars the argument throughout.

But there are other things wrong with this comparison. Permaculture design never starts with the precise individual components that Dan suggests over and over again that it does. Far from it—these are the last types of elements added to a design, whether on paper or on the ground, and whether we are considering permaculture design or the "timeless way of building."

In fact, both approaches start with client consultation and then proceed to site analysis, design formulation, and finally, design implementation. All four of these stages start with the whole, and proceed through Alexander's fuzzy clouds to clearer and clearer components; all four together lead to and result in the ultimate creation of a whole: an ecosystem, building, or complex of buildings. None of the four stages of a design starts with fine details.

Thus, all four stages, and both Mollison and Alexander, start with a whole and end with a whole. Both Mollison and Alexander make sense of the whole they are starting with by evolving a picture from large elements to gradually finer and finer elements. Alexander's big vaguely defined clouds become more defined as smaller components are added. Whether he is talking about folds, crinkles, patterns, or details being created during the formulation of a design, he is talking about components. Putting them together in thought and on paper is a prerequisite to the on-ground execution of the design, which starts and proceeds by putting together these very specific components arrived at by the gradual "differentiation" which took place during the formulation stage of the design process.

Interestingly, both Mollison and Alexander start with the biggest whole possible, the whole planet—Alexander in Pattern 1 of his book *A Pattern Language,* wherein he advocates for 1,000 independent regions instead of 200 countries; and Mollison in his first ethical principle: Care of the Earth.

Alexander proceeds from his whole through gradually increasing clarity to Pattern 213, "the last thing you do on paper," before, in Pattern 214, we "put stakes in the ground" and start constructing our building. From there on, every pattern describes the addition of another component!

Mollison proceeds from his whole to "big picture components"—further discussion on ethics, sections on Permaculture in Landscape and Society, and Concepts and Themes in Design, and whole chapters on Methods of Design, Pattern Understanding, Climatic Factors and Trees and their Energy Transactions—before we reach actually working on the ground in chapters on Water, Soils, and Earthworking and Earth Resources. It is only when he comes to Chapter 10, The Humid Tropics, and continues with Dryland Strategies, Humid Cool to Cold Climates, and Aquaculture that we are being taught to put components together to create self-sustaining systems.

During the first stage of design, when either Alexander or a permaculture designer is consulted, a great deal of time must be spent listening to and asking questions of a client to find out as many details as possible about what the client needs and wants,

the functions the building or landscape are meant to fulfill, who will be living, working, or being served by the creation, and so on. And both are as likely to start with big broad questions to do with the whole, such as: "What do you want?" or "What are your dreams?" In response, the client is likely to respond with two or three big indistinct clouds!

In either case, what the designer ends up with is decidedly not a blank slate, but a great number of details which will later be used to shape the whole to make a whole. It is important and useful to note these two uses of the word "whole" that are at play in this discussion.

The next step for permaculture is a site analysis, which also happens before the design process begins, of course, but is also an example of Alexander's gradual differentiation. One does not start by looking at small, individual and specific components but rather at large aspects of the landscape: slope, aspect, sun/shade, wet/dry, broadscale sector analysis including wind and fire direction—once again, in Alexander's language, big somewhat imprecise clouds (which, nevertheless, it must be stated emphatically, are components!). From these, we might proceed to take note of areas of tree cover, open pasture land, rocky outcroppings, boulders, and windfalls. Only gradually and finally do we note and record individual species of trees, shrubs, herbs, and groundcover plants.

Once a site analysis is completed and we know all the components that are present—big and little, generic and specific—on the piece of land we want to convert into a permaculture homestead/farm/community, we can begin to start stage three, formulating a design, in head and on paper. We can take the existing elements into consideration and often use them, but, strikingly, just as often, particularly in the development of zones one and two, we might alter, transform, or totally remove many of them. In doing this to create a "whole" starting place, permaculture is mimicking nature, which usually (or always) starts a new design following some catastrophic event which has radically altered a previous landscape—a forest fire, volcanic eruption, hurricane, flood, road-building, logging, or old growth fir crashing to the ground. All of these often involve a radical scouring, creating a new natural whole from which to start—from a whole burnt forest, a whole clearcut, or a recent floodplain, to a deserted pasture, or an abandoned field created by industrial forestry, bulldozers, and plows.

Coming to stage four—the on-ground implementation of the design—nature's approach as well as permaculture's now starts with broad determinants and constraints: sun, shade, wind, water, rich soil, dry soil, stony outcroppings, etc. Nature then saturates the site with very specific components: seeds and critters of all kinds everywhere, building a complex plant and animal community by allowing everything to fight it out. Permaculture starts with such a blank or whole canvas the same way, but then more often uses the opportunity of the disturbance, whether created by nature, past humans, or the designer, to begin to consciously select and add components, starting with big broad ones and finally proceeding all the way to "things from your life," the last pattern in *A Pattern Language.*

To illustrate how the permaculture designer proceeds

so now I put some soil and finished compost on top of a completed pile and plant potatoes in it.

My garden has a patch of flour corn every year; patches of low greens, tomatoes tied up on bamboo, bean trellises, and rambling squash vines like most. There are differences too: evening primrose, parsnip and raddichio flowering in yellow, pale yellow, and blue on stems taller than I am, scattered randomly all through the garden. Hummingbirds dart about, and families of rosy finches eat the seeds.

In recent years, I've watched as more and more birds spend time here. Butterfly diversity has increased three-fold. Garter snakes are more plentiful than when the land was a blackberry patch, and even when I'm disabled (like last year) and haven't planted much, I can hobble out, get down on hands and knees with a small pick or knife and harvest nutritious things I did not directly plant—filling a basket for dinner. I'm digging less, and the soil is getting softer. It's more often I can find areas where I can comb out a seed bed instead of laying sifted compost on top like at first. I have seed of all sorts to share, and I'm seeing that I can increase the perennial margins and have more perennials than I thought. I can see the light at the end of the tunnel: decreasing work to develop soil. I will have more time to experiment with new crop species and process the harvest. I'm excited to once again make my own tarragon mustard from scratch—only this time the vinegar will be from my own apple cider. Δ

Rick heard about permaculture while looking for grassroots ways into applied ethnobotany in 1981. He began by exploring hand tools and useful bamboos, and currently is keen on assisted migration for key western plant species. He's a PINA teacher and designer who prefers working in mixed gender teams and with animal allies. Living in Eugene and Deadwood, Oregon, he implements permaculture designs as a licensed landscape contractor partner in Earthkeeper Landscaping LLC.

Eggplant among other garden plants. Photo by MabelAmber, CC0.

in exactly the same way Alexander might, both during the conceptualization stage and even, and perhaps more strikingly so, on the ground during the implementation stage, let us consider, say, the introduction of a small dam into a wetland "whose size is imprecise, and with imprecise edges," to quote Dan quoting Alexander describing a cloudy volume: a meandering watercourse passing through slightly undulating land on a gentle slope of terrain comprised of many small irregular pits and mounds. This one component, the dam, in effect serves to "crinkle" the landscape in three dimensions, thus creating a number of smaller, more defined parts: a pond of various depths, much crenellation, marshy areas, small islets. Next, the designer may alter this further by digging out some of the pits, adding height to some of the mounds, incorporating fertile soil in places, broadcasting dolomite lime in certain areas, and deciding where to sow a cover crop. Next, he may decide where an orchard should go, and the fencing to create connected pastures for poultry in rough proximity to where fish could be raised and water plants grown. All these additions are components adding complexity to the system, helping to making the "vague cloudy pattern" of the wetland "more precise" "by placing other smaller patterns, which define its edge and interior." So far, no species or varieties of trees, shrubs, vines, groundcovers, or perennials have been decided upon or introduced, even though, once the third stage is completed, one may be able to choose and locate many precise individual components. This possibility of early and quick "complexification" is especially true, and especially necessary, once one has established the location of the doorstep, and has actually begun living there, and often conflicts time-wise with the simultaneous necessity of broadscale developments such as earthmoving and windbreak establishment.

Finally, Alexander's analogy for his approach—the growth of an embryo starting from a single cell—is fundamentally flawed, although in fact, the single cell perhaps more accurately describes both sides of this design debate and may illustrate nicely the complementary nature of the two approaches rather than their mutual exclusivity. The cell is not some blank whole without parts waiting to be transformed by cell division, as Alexander portrays it. It is, rather, an incredible composite of components—atoms, molecules, and compounds—assembled one by one for billions of years. Some of them support the life of the cell itself; others completely preordain, before even the first division, exactly what will be produced. In fact, the evolution that led to that human egg is a perfect illustration of two permaculture design methods: Design from Nature and Design by Random Assembly. (Nature too learns from its mistakes—most configurations don't work!) Evolution also proceeds from the simple to the more complex, with no knowledge of, or relationship to, any future created outcome. Increasing complexity arises from an increase in the number of components. The entire design process of evolution which finally led to a human germ cell is a perfect example of, in Alexander's term, "design as a sequence of acts of complexification."

In summary, I find no difference in permaculture's approach to design and Christopher Alexander's, and conclude that any imagined differences have arisen because of an incomplete and imprecise reading of both; a failure to make distinctions between different uses of the word "whole" and different stages of the design process; a lack of differentiation between components every time they are mentioned; a false understanding of how permaculture design starts; and a confusion between the process and the finished product.   Δ