

Logic, Proportion, Scale and Locomotives

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No serious bonsai student can go very far in his art without understanding the concepts of proportion and scale. So let's understand them. Think of proportion as the comparative relation between parts or things with respect to their size, and scale as the proportion that a model bears to the thing that it represents. The two are separate concepts but absolutely connected. Your bonsai is a model of a tree (and much more, but we must begin here). To make a good model, the proportions within the model must be equivalent to the proportions within a tree.

On the other hand, the scale you choose for your model will not affect how good or bad a model it is, but only the impact that the finished creation has on the viewer. In other words, you must ask yourself if the scale you choose works with the specie you are using, etc. But your models will still all be bonsai even if you design in many scales. Model train collectors set up models in their living rooms occasionally and debate the relative impact and realism imparted by each of the different scales that models come in. But they are all models of trains regardless of scale.



It may be argued that no model train can compete with the visual impact of a life size locomotive, but most scale models do fit better in a living room. Of course we know a good bonsai is more than just a faithful model of a tree. Or more accurately, less than a faithful model of a tree. Less because if we were to include all the branches in bonsai creation that occur on its life size counterpart it would end up having the density of an anvil. And, of course, butterflies don't fly through anvils very well. So our model must be to some extent representational in order for us to enjoy it within the proportions that we see in full scale trees. This deviation from strict scale is what sets bonsai apart from model trains, (that and the fact that model trains can go months between waterings).

Now lets return to proportion and see if this discussion will help us set perimeters for appropriate scale for bonsai. In understanding proportion the focus is not on how big the base of the tree is but how it compares in size to the apex and branches. It's not how thick the trunk is but how this thickness compares to the overall height of the tree. The thickness of your number one branch is less important than its proportion to the branches up near the apex of the tree. Fortunately trees are very logical creatures, more logical, for instance, than the spelling of the English language. Branches on the top of the tree are younger and therefore thinner than branches found on older parts of the tree. In fact, by using logic you can answer a lot of questions concerning proportion without even looking at a full scale tree.

We use a proportion or ratio of one to six for trunk diameter and height respectfully to achieve dramatic proportions in bonsai. A twelve inch high bonsai should therefore have a basal trunk diameter of two inches. Since we rarely see trees in nature with this proportion (bristlecone pine is a notable exception) again we are deviating from strict proportion the way we deviate from strict scale. Because of this deviation the resultant bonsai has even more impact than a full scale tree, and unlike a locomotive fits nicely in a corner of the living room.

Now, must we use this one to six ratio for our proportion in all of our bonsai? Not really. Full scale trees (mustn't say real trees because unlike model trains our bonsai are real trees) come with lots of different proportions. It's convenient, however, to have a mean or guideline to go by. Cars are longer than they are wide. If you built one that was wider than it was long and drove it downtown it just wouldn't fit into the normal traffic patterns.

We'll conclude with a return to the subject of scale. Somewhere it says a bonsai shouldn't be any taller than 48 inches. I don't know who first said this, but it's why all of my bonsai are under 48 inches. He may be watching me. But for all purposes of discussion let's say that 48 inches is as tall as tree models can be and still be regarded as bonsai. At the other end of accepted height guidelines are the little six inch size or shohin size bonsai. (Mame or bean size bonsai will not be included in this discussion, as it would lead us into the subject of models of model trains. We'll leave mame scale and proportion to more knowledgeable devotees).

So now how big is a full scale tree? Here is the tough part. Everyone agrees pretty much on how big locomotives are. But

although trees may be logical creatures they're not conformists. There are big trees and little trees. Another reason why tree models or bonsai have so much individual character and come in so many sizes. But let's say for discussion that a tree is normally 45 feet tall. So the largest scale we use in bonsai is the ratio of 1 to 11.2 or 1/11th scale. The smallest scale would be 1/90th. Who cares right? This is beginning to sound like a dendrologist's thesis who later got into investment banking. Actually though, it does matter.

The scale you choose for one species or style may not be appropriate for another. Consider a Japanese magnolia. Because they have large leaves, using a 1/90th scale would make the bonsai grotesque. Choosing a 1/11th scale for a Hokaido elm would make the already small leaves look unnaturally small in relation to the tree's size. Again we are concerned with the proportion while considering scale. Notice we got through this whole article with few must nots or must dos and not even one diagram to memorize. Rather than remembering charts, diagrams, ratios and rules of proportion, understand the concepts then choose the appropriate scale as dictated by the species. Use logic to help arrive at good proportion. Be willing to deviate from strict scale and proportion so your bonsai have the magic of a painting not simply the realism of a photograph. Practice these things and you'll go further in your art and your trees will have greater visual impact than their full scale counterparts. Oh, and since our model train devotees can never really go beyond simple realism in their models, don't be surprised to discover an occasional real locomotive in a living room.