

## Chapter 5: Color Your World



Forest symphony

## Silent Fireworks

Kaboom!

Listen, do you see it?

Look, can you hear it?

A visual blast!

A million competing light waves  
begging for your undivided attention.

Look at me! Look at me!

How does it make you feel?

What do you perceive?

A single leaf in transition?

One color?

Or the full spectrum of a rainbow?

A galaxy within a galaxy?

You smile.

Was all this for you?

or does your reaction

fulfill the trees' dreams?



A leaf for your thoughts, Mr. Mark!

## A Leaf for your Thoughts

"Forgive me for asking the obvious Mr. Mark, but how does autumn effect trees?"

"Good question Darwin! But for the answer we need to back up before summer and into early spring. It starts with water making its way into a tree's roots while its leaves absorb carbon dioxide gas. As the sun shines, the tree turns the water and carbon dioxide into glucose which is a type of sugar. The tree then uses glucose as food for energy to survive and grow in the same way that delicious dog food effects you. The process is called photosynthesis."

"You dare compare what you feed me to sugar?" asked Darwin indignantly. "I think I'll try a taste of leaves for my next meal!"

"I am tempted to say 'Bite me' for such insubordination my little four-legged fur ball, but I am afraid you would actually oblige. "Now, where was I? Oh yes, a chemical called chlorophyll offers the process a boost and gives the leaves their spring and summer green color."

"Trees must be smart to understand all those ingredients Mr. Mark. I'm not sure I do."

"They really are smart Darwin. In fact, trees know when to get ready for winter. As summer ends and autumn starts, the days grow shorter. When winter starts, there isn't enough light or water for photosynthesis. Like you taking a good long nap, trees will sleep and live off the food they stored during the summer. The green chlorophyll will disappear from the leaves. Once the green is gone, we'll start seeing yellow and orange colors that were there all along in small amounts. The green had been covering them up. We'll also see brilliant reds, purples and brown."

"Thanks Mr. Mark. I think I am beginning to fall for Fall!"



Light seekers.

Strange as it may seem, colors are not real.  
They are an illusion that our brain's neurons create.  
There is light of a certain frequency but the light itself is without color.  
Color is what our mind creates in response to those frequencies.

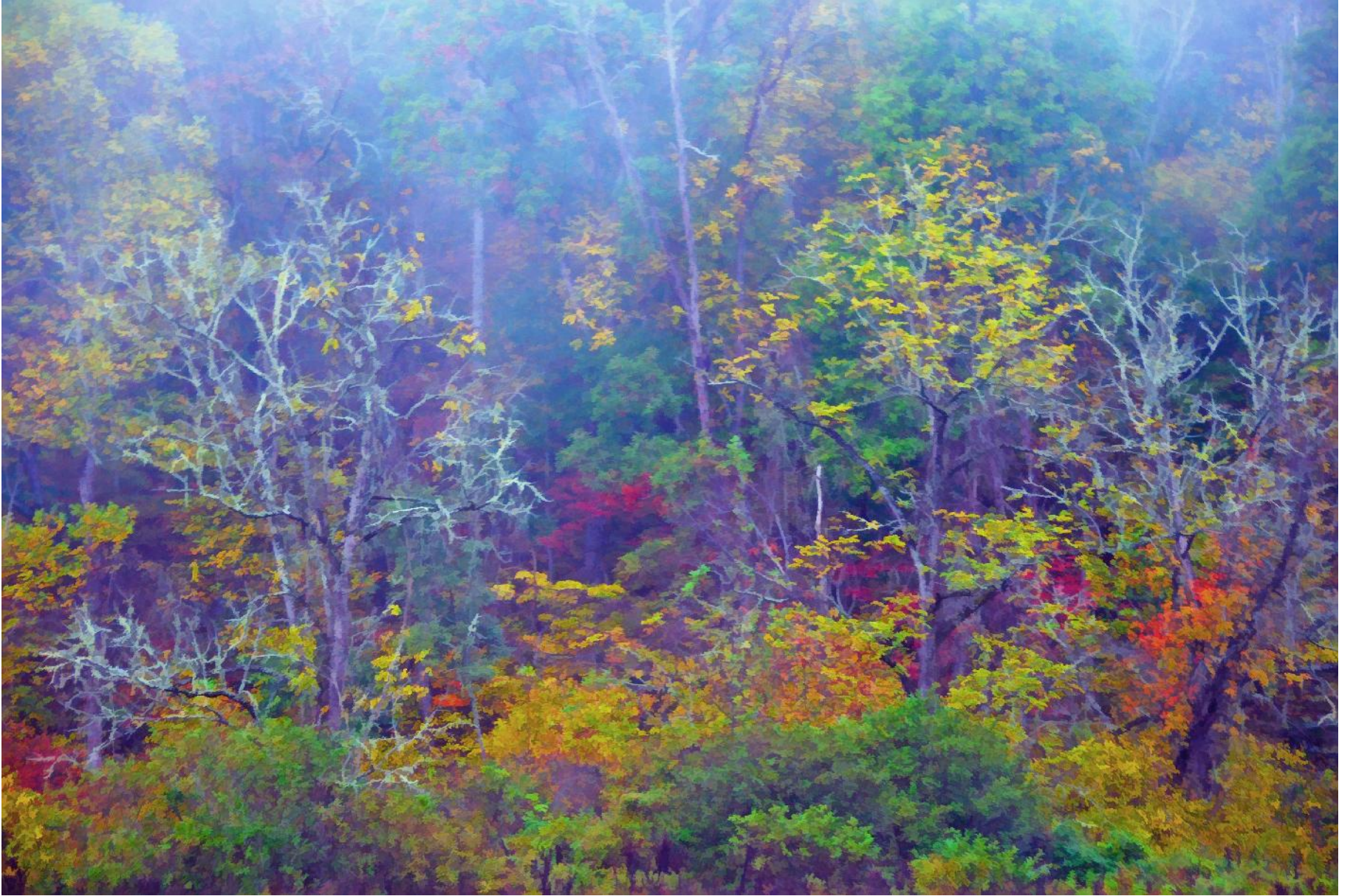


Rhythm section, forest musical

### **Going in circles**

Because Earth orbits the sun elliptically and spins on a tilted axis, sunlight hits the hemispheres at different times of the year.

Winter, spring, summer and fall occur because of the amount of light, energy and heat produced by the sun as it hits each region.



The color of energy.



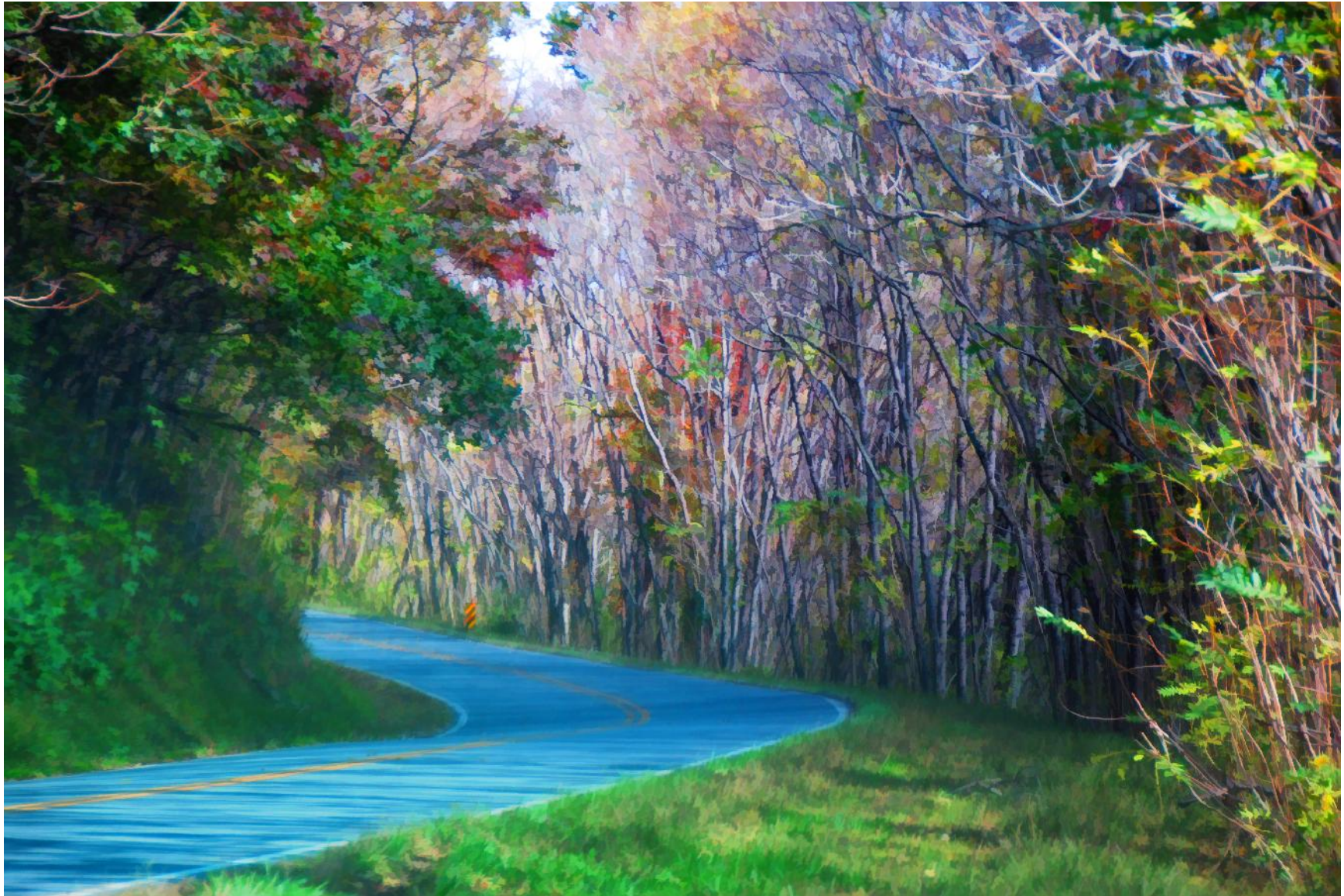
Conflict resolution.



Do they see us  
as we see them  
A photograph  
of where we've been  
Look at you  
Look at me  
Hello there friend  
it's nice to be  
Here with you  
Here with me  
Between the sky  
and the stream

## **Can seeing in color save your life?**

Think about the number of dangers facing you daily that can only be overcome by your ability to see in color. What if you were approaching a traffic light and couldn't tell green from red? Or saw a harmless looking red, yellow and black snake at your feet? What about some of the minor inconveniences even of making sure you picked the ripe colored orange, apple or strawberry? We often take color vision for granted. But recognizing colors may have helped early humans choose the safest fruits to eat, or allowed them to recognize a dangerous animal by its colors, or lack of them.



The light show continues beyond every bend.



Lest the trees think they've stolen the show, the sky adds a layer of blue.



Things are never quite what they appear to be.  
If we aim our camera into a forest...

...we'll see both perfection and chaos.  
This is evolution at its finest.  
To us, it's a snapshot of one moment among millions.  
Nothing that looks perfect  
will look that way for long.  
Change is constant.  
Perfection is temporary.  
Chaos is movement.  
and in its own way, perfect.



Where songbirds go to practice.



Take everything you see with you, but leave it all here.



Who would notice the sweetness of green without the reds and golds and haze between?



You can still be yourself in a crowd.



Darwin was asleep when I introduced him to his first bear...



But reluctantly agreed to wake up long enough to shake paws...