# The Allaire Data: It is Easier to Find Bigfoot than Scientific Objectivity

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It is commonly held that there are no reliable scientific data on the species known as Bigfoot or Sasquatch. In fact, such data have been available online since 2015 in the Figshare scientific data archive.<sup>1</sup> The Allaire Data have been available to the public under the keywords "anomalous large non-human primate." This is their story.

Let's dispense up front with the silliest of objections: "If these animals really exist, then in a state as densely populated as New Jersey, people have to see them." Well, that is exactly what the data demonstrate. Note that this argument not only fails as an objection but requires that we accept the existence of the animals given that they have been seen.

In the case of Allaire State Park, the animals have been reported about every five years at least since the late 1960s. I grew up and still live just a couple of miles from the park and am quite familiar with what has been reported through the years, including multiple reports from bow hunters—people who most certainly know what the different kinds of animals that should be in those woods look like. And I myself have seen one of the animals at a distance of about 35 feet during daylight in good weather in the late summer or early fall of 1966 (there is, of course, a family story about that). So, it was no surprise to me when a person who had come from northern New Jersey to mountain bike on the trails at Allaire reported to the police on 23 May 2014 that he had seen a "gorilla."

The police and park rangers responded, and the biker gave them a picture of the animal that he had taken with his cell phone. There was no question that he had seen a large black animal. The only question was whether he had seen a



#### FIG: 1.

"gorilla" or he had seen a black bear. The Park Service brought in a tracker who was able to find a black bear and therefore dismissed the report as a species misidentification. However, the person who made the report maintains to this day that he saw a "gorilla" that was initially sitting on a downed tree and stood up and walked off upright.

Let's dispense at this point with a second specious argument, that of "I don't know how anybody could possibly mistake a bear for a gorilla." The argument is always made sarcastically and in a pejorative fashion. However, in reality, the argument cuts the opposite way. When someone says it is not possible for any sane person to make that mistake, they are actually making the case that the report from a demonstrably sane person has to be true. But such clear thinking is rare to find when discussing Bigfoot.

The single picture, which had been available online,<sup>2</sup> shows a couple of interesting things. The first is that the animal is bent over with its front right appendage down to the ground in the middle of the trail. If this was an upright animal walking off, why would it stop in the middle of the trail and be in that pose? The behaviorally sensible explanation is that the animal had to bend over to retrieve something of great value . . . which for a wild animal would be one of its young. So, we immediately have an indication that we are dealing with multiple animals including young. The second thing of interest is the size of the animal. It is easily 6 feet tall when standing upright. And for me, a third thing of interest is the color, which is close to black. This is exactly how I reported the color when writing down what I had seen in my youth. But perhaps the most interesting detail is that a left hand can be seen, and it has distinguishable individual fingers.

Now, the Park Service was handling this as an either/or proposition. Either there was a "gorilla" that perhaps had escaped from a private exotic wildlife refuge (we had had tigers escape not that far away a few years earlier) or there was a black bear. They do not appear to have considered the case that both could have been present at the same time, nor do they appear to have considered that there might have been some other type of primate. As a scientist who had taught the scientific method, it was immediately obvious to me that more data needed to be collected in order to get to the bottom of what had been seen. And since I had the time, the means, and an interest. I undertook to collect reliable scientific data to answer the question.

Let's digress for a moment to clarify the descriptors *reliable* and *scientific* as regards the Allaire data. Merriam Webster's Dictionary defines reliable as "suitable to be relied upon" and "giving the same result on successive trials."<sup>3</sup> The police and park rangers had already established that the initial sighting was not a hoax. The Allaire data set speaks for itself in regard to its not being a hoax. The data set documents repeatable observations of multiple animals of different sizes over about a nine-month period. It is preposterous to contend that someone constructed four or five different Bigfoot costumes ranging in size from a small child to something about the size of an eighth-grader to adults 6 feet or more tall and had people in those outfits over a nine-month period, in the closed park in bad weather including blizzard conditions, and on private property and in another park several miles away, and that somehow I was in the same place at the same time for all of those observations. And anyone who thinks to say that I have hoaxed the data had better have a very good lawyer. I am an Eagle Scout from the days when that actually meant something (prior to the James Comey debacle). And I am a PhD scientist with a good job and a good reputation-why would I jeopardize that?

Moving on, Merriam Webster defines *scientific* as "exhibiting the methods or principles of science" and "conducted in the manner of science" further explained as "practicing or using thorough or systematic methods."<sup>4</sup> I had taught the scientific method as an adjunct for a few years, and from the get-go, I was very meticulous in making sure that the work was carried out according to the scientific method. In fact, one of the best things that came out of my time as an adjunct was being introduced to the website Science or Not?<sup>5</sup> The website has a step-bystep itemized list of the scientific method and hallmarks of proper science. The website also

has a separate listing of red flags. I used the itemized list of steps to guide my work and rigorously avoided any of the red flags. So, when I describe the Allaire data as reliable scientific data, I am using those adjectives precisely. And all the work was conducted on the basis of collecting data to test the predictions of alternative hypotheses, such that the hypotheses could be rejected if clearly falsified.

In the scientific method, we start by considering the hypotheses to be investigated. The hypothesis of a hoax had already been falsified by the police and the Park Service. Considering the original observation, there were multiple hypotheses to be investigated. These were, firstly, that the person had seen a "gorilla," as in, a known species from Africa, that was somehow loose in central New Jersey; secondly, that the person had seen a black bear and had made a misidentification; and thirdly, that the person had seen an unacknowledged large primate of the type commonly referred to as Bigfoot. For completeness I also considered the alternate hypothesis regarding Bigfoot that "no such animal exists." From these hypotheses I built out testable predictions. For each of the three candidate animals, if the animal was present we could predict that we would find distinctive footprints and tracks of footprints, that we would be able to develop a behavioral pattern from the tracks, that we would be able to determine the sizes and numbers of animals present from the tracks, and that we would be able to use the behavioral pattern to find the animals and obtain photographs and/or video. The alternate Bigfoot hypothesis that "no such animal exists" strictly predicts that no such footprints could ever be found, and no such photographs could ever be taken. Note the strength of those predictions for the alternate Bigfoot hypothesis: a single footprint or photograph is sufficient to falsify the alternate hypothesis that "no such animal exists."

The next step in the scientific method is to go out and collect data to test the hypotheses. That meant going out into the field and looking to see what was there. Fortunately, I had studied tracking just a few years earlier in order to serve as a Tracking Merit Badge counselor for the 100<sup>th</sup> Anniversary of the Boy Scouts of America. So, I had a good idea as to what to look for, how to go about looking, what to measure, and how to go about documenting what I found. My main limitation was in the camera gear that was available for me to use. I had an old Canon AE-1 Program 35 mm SLR film camera, my old-style cell phone, my wife's small digital point-and-shoot, and my wife's small digital video camera. I had not yet purchased a modern digital SLR camera. But my thought process was that any picture would be better than no picture and that the pictures only needed to be good enough to document what I reported. In terms of measurements, I had a good assortment of rulers, squares, and tape measures available for measuring the sizes and shapes of any footprints, step sizes, and gait patterns. And I made up some frames for casting tracks in plaster.

So how did things go? Very well. As in, really very well. As in, fantastically, spectacularly, really, really very well.

My first trip to the park came just two days after the initial sighting and before I had found the cell phone image from the original sighting posted online. I was anxious to get there quickly, but it turns out there was no need to hurry. The Allaire data, including the historical sightings, demonstrate that these animals are nomadic. They move into an area and work that area for a while, then move on to a new area. I did not need to hurry because they were going to be in the area for almost a year. Suffice it to say that I found foot impressions from one or more large animals on that first visit, but they were not distinct enough to distinguish the type of animal. The most important result of that first day was finding out that the film camera was not going to get the job done. Having film developed then digitized was going to be an onerous process. I needed to be working directly with digital images, and I put the film camera out to pasture.

I found the cell phone image posted online and could identify the general area where the sighting had taken place, so I went to a different section of the park on my second trip two days later. I got about <sup>1</sup>/<sub>4</sub> mile down the trail before finding the first 14-inch-long by 5-inch-wide barefoot footprint. The outline was very similar to that of a human, but the size was well beyond that of any human. I tracked on around for a couple of miles on partial and full tracks, all of which headed westbound in the south side of the park.

My next visit, another two days later, was to the western trails on the north side of the park. I arrived there early in the morning, shortly after an overnight rain had ended, and I found a fresh track of 14-inch by 5-inch footprints, 1/4 inch deep, headed eastbound, with a 45-inch step size on flat, level ground of hard-packed gravel. I have video of myself trying to leave a similar depth of impression by jumping on one foot next to one of the footprints. The video shows that I could not leave a mark. This track told me two important things about the behavior. First, the animals are nocturnal. The track was made during the overnight rain when the park was closed. Second, the animals were coming in from the west to hunt in the large meadows filled with deer at night and heading back out to hide somewhere to the west during the daytime. Later measurements of step sizes confirmed a shorter stride in westbound tracks on the south side where the animals were presumably carrying what they had caught back to their hide locations.

Suffice it to say that I began looking a little further west to see if I could determine where they spent the daylight hours, and within two weeks, I had a good enough idea so as to be able to walk right in with one of the animals standing out in the open. I had a hypothesis that since these animals have a very well-developed survival instinct to avoid contact with humans, they must have a good understanding of the norms of human behavior, and if so, they would expect to not see humans out in the rain in the deep woods. So, I went out looking in the rain when the opportunity arose and walked right in on one of them. Not only was I unexpected, but the wet ground dampened the sound of my footfalls and a light breeze from the north aided my approach from the south. The video documents the smallest of the animals . . . quite likely having been born just a few weeks before or perhaps just a year old. The animal was the size of a small child at about 30 inches tall with a head about 5 inches across. It goes without saying that I was not about to approach one of the youngthat would be foolishly dangerous. Instead, I signaled my presence and walked away in a non-threatening fashion, figuring that my best bet was to try and habituate the animals to my presence, hoping for more and closer encounters as time would go by.

The following week, I placed a trail camera back at that location. I obtained two full-color daylight images and two grayscale short-wave infrared (SWIR) images. Then another week later, I placed the trail camera about <sup>1</sup>/<sub>4</sub> mile to the south and got another SWIR image. And while walking in to place the trail camera, I got a noon-time picture, using the point-andshoot, of an animal peeking out from behind a group of trees.

By this point in time, I had obtained enough footprint data to falsify the hypothesis of some sort of known primate being on the loose. Humans are the only known primate species with bipedal locomotion and a forwardaligned big toe. I had consistently found only bipedal tracks with a distinctive non-human gait, foot size, and step size, and had never found other than a forward-aligned big-toe mark. In fact, the footprints were distinctive in that they lacked an arch and showed midtarsal flexibility, and the gait was distinctive with a zero offset and zero foot-angle. All this remained consistent throughout the 2000+ footprints I ended up examining in dozens of tracks through sand, gravel, soil, grass, and snow.

A couple of weeks later, in July, I obtained some more significant video. I had already found pawprints and tracks from the black bear that does, in fact, range across Allaire State Park. It turns out that the black bear can be seen sitting in the bushes, and a large primate can be seen in the same frame standing a short distance away with one of the young riding on its back/shoulders. This single frame alone was enough to falsify the hypothesis of species misidentification.

By this point, then, I had already falsified the hypotheses of "gorilla" and black bear. What then of the alternate Bigfoot hypothesis that "no such animal exists"? Simple. I had dozens of distinctive footprints, including some that I had cast in plaster with sizes impossibly large for being human. And I had image data using the video recorder, trail camera (in both daylight and SWIR modes), and the point-and-shoot. Much as many will have a hard time "believing" this, the science is unambiguous. The data falsify the hypothesis that "no such animal exists." The reliable scientific data had ended any debate . . . or so I thought.

As you can imagine, I was very excited and wanted to tell the whole world—or at least the people I thought would be, or needed to be, interested. So, I contacted a good number of people who claimed to be interested in these types of things . . . and not a one of them came out to see the animals for themselves. So, I tried submitting proper scientific papers to primatology, biodiversity, and science journals . . . with no success. The most telling reviewer stated that all my work was correct, but he was simply not willing to accept any paper on Bigfoot without DNA or a body.

Nevertheless, I continued collecting data, and working off the behavioral model, on 20 September 2014, I walked in on the troop in another daytime hide location 5 miles away on a nursery farm. The video documents two separate juveniles that each stand about 48" tall, along with one of the adults that stands 6 feet tall or more. I could hear another smaller animal in the greenery (the video may capture a glimpse of it through a window in the greenery). I took a short video that fortunately captured a very loud knock that I interpreted as a warning to move away from the young animals, and I turned away and let the animals exit the area. The bottom line is that at least four animals were together in that hide, and the brief encounter is documented on video.

A couple of months later, I finally bought a good medium-format DSLR camera. I was able to use it to document almost a mile of track in a fresh 8-inch-deep overnight snowfall back at Allaire State Park. But I have yet to have the chance to use that camera to record an encounter. As far as I can tell, the animals moved on to the next step in their nomadic wanderings in March of 2015.

There is a lot to be said about the Allaire data and what it teaches about the animals. Let me try to list out some major points.

1) The animals are primates. The images document hair-covered animals with an "ape-like" facial appearance and hands with slender fingers and fingernails. To my eye, out of all the pictures I have ever seen of different primate species, they are most similar in appearance to howler monkeys.

2) The animals live as a troop. Tracks indicated multiple individuals walking together, and one video documents the troop together during the daytime hide. Another video documents a smaller animal riding on the back/shoulders of a much larger animal.

3) The footprint data identify at least five animals in this troop with various foot sizes: two large, two smaller, and one very much smaller as 16" x 5", 14" x 5", 12" x 5", 11" x 4", and 7" x 2-3/4".

4) The image data show animals consistent with at least four of the five footprint sizes.

5) The animals are exclusively bipedal. No indication of knuckle-dragging or quadrupedal locomotion was observed in 2000+ footprints found in dozens of tracks over a nine-month period.

6) The feet exhibit a forward-aligned big toe, no arch, and mid-tarsal flexibility.

7) The gait shows zero offset and zero footangles with step sizes up to 45 inches. In plain English, draw a straight line and place your feet exactly parallel to the line with the inside of your feet exactly touching the line, and at the same time, make your step 45 inches long. Hint: you can't comfortably walk like that! The data are consistent with a New World species having separately evolved for bipedalism and likely as an offshoot of the howler monkey. This would be exactly consistent with what we know about New World monkeys having a separately evolved mechanism for tri-chromatic vision and also with the imagery of human-sized howler monkeys carved on Mayan temples.

8) The animals are nocturnal hunters. The data do not rule out being omnivorous, but such has not been observed in the Allaire data. The young have been observed hunting small animals during the daytime at the hide.

9) The animals eat their prey, <u>bones and</u> <u>all</u>. This is a significant observation that is exactly consistent with Native American lore.<sup>6</sup> This point leads to a significant corollary. Native lore elsewhere reports the animals as cannibals. Cannibalism does not necessarily mean that creatures kill each other but does mean that they will eat their own species. This could include scavenging their dead, which would provide a simple and natural explanation as to why we don't find dead bodies.

10) The hair is black with some brown tones. The color looks a lot like a very darkly creosoted piece of wood.

11) The animals have been observed using four different methods to avoid detection by humans, two of which are surprising. The obvious first method is to use natural vegetation for concealment. The animals will position themselves to have most or all of their bodies concealed while maintaining a discreet view through a small window in the vegetation. This includes lying down flat on the ground in short vegetation. The second obvious method is to become motionless when they can see that they are being looked at. One video documents an animal ducking down and out of view during the short instant that my attention moved off of the animal. The third and somewhat surprising method involves taking a piece of vegetation and moving it back and forth in front of the face. This makes it difficult to recognize the eyes and mouth, which are the two most visible features of the creatures, as the whites of the eyes and red inside the mouth contrast starkly against any concealing vegetation. This also makes it very

difficult to get good images of the animal's face. The fourth and most surprising method is the use of human-made objects for camouflage and/or concealment. The video documents what was observed live—one of the animals in the woods at the nursery farm had a green plastic pot on top of its head like a helmet and, yes, this was <u>very</u> effective in confusing me as to what I was looking at.

12) The animals appear to be tolerant of a single, non-threatening human approaching to within about 75 feet. The animals will maneuver to maintain that distance. The animals appear to withdraw when multiple humans approach.

13) There is some indication that the animals can be habituated to repeated contact with a given human.

14) The animals communicate using whistles, knocks, and calls.

15) Two different hide sites are documented in the Allaire data. Both were found near the center of relatively large (for the area) wooded locations with wetlands and water obstacles. Such locations provide the greatest separation from human contact, and the water obstacles make human entry much less likely. Bed-down areas were found in the tall reeds at Allaire, and later on, similar bed-down areas were found in the tall reeds behind the nursery farm. The locations were relatively (for the area) quiet so that anything approaching without care could be heard. An important corollary is that these are the types of locations that, along with interconnecting greenways, will need to be protected for this species to survive.

16) Tracks were documented as much as five miles away from the center of activity. The animals appear to have ranged over a local area on the order of 50 square miles while centered at Allaire.

17) While not observed directly, the data are consistent with a nomadic pattern with an early spring relocation ahead of birthing, followed by an extended period in the same general area. The pattern provides for movement shortly after the end of the hunting seasons by humans and allows the greatest amount of time to learn the new area ahead of needing to hide during the next fall hunting season.

The data show that it is not at all difficult to find Bigfoot. The Allaire data document that it took me, a rank amateur, less than three weeks to do just that. Just make sure to go out and look during the daytime when you can see and the animals are not moving around (going out at night when you can't see and the animals are on the move is about as stupid a plan as could ever be imagined). A daytime sighting in the spring is a clear indication that the animals have centered nearby for the season, with "nearby" likely less than a mile away. A rational analysis of the terrain followed up by tracking should very quickly lead to an encounter with the animals.

Let's return now to the scientific question on the existence of Bigfoot. Prior to the Allaire data, two competing hypotheses were in play: H1, the animal does exist; and H2, the animal does not exist. Both lead to testable predictions. If the animal exists, then it should be possible to track it, learn the behavior, and obtain pictures and/or video. If the animal does not exist, then there can only and ever be exactly zero tracks and exactly zero pictures and/or video. The original sighting and the Allaire data document repeatable results with independent confirmation that meet the predictions of "the animal does exist" and contradict the predictions of "the animal does not exist." Hypothesis H2-the animal does not exist—is unambiguously falsified by the reliable scientific data. Hypothesis H1the animal does exist—is unambiguously

supported by the data. There is no wiggle room here. The proper science is a done deal. The animals exist. Skeptics, get over it! The only ways to reject the results are to reject the comprehensive, internally consistent, and publicly available data set or to discard the scientific method in its entirety. There is a lot more to tell, and I could go on talking about this for hours or maybe even days, but I think I will stop here. Since the science journals don't want it, maybe I will just assemble all of the data and the analysis into a book.

## **Photo Gallery**



FIG: 2.

FIG: 3.

Black bear paw print (figure 2) and Bigfoot footprint (figure 3) in snow. The bear paw print shows the distinctive shape of both front and rear paws along with marks from the non-retractable claws. The Bigfoot footprint is very human in shape, and the individual toe marks are clear.



FIG: 4.

FIG: 5.

Front (figure 4) and rear (figure 5) paw prints made by the black bear in sand gravel showing the distinctive pattern of non-retractable claws.



FIG: 6.

Bigfoot footprint in sand gravel showing the distinctive pattern of no arch and mid-tarsal flexibility.



FIG: 7.

Cropped frame numbered 04-42 from 720p HD digital video with the face and hands of a juvenile animal visible just left of center past a squirrel that is oriented face-down in the foreground. This frame has good focus and minimal motion blur. The pink-colored palm side of the right hand is distinguished as are individual fingers with white fingernails and the thumb oriented sideways just below the mouth. The top of the head is covered by a green plastic bucket with a rolled lip. Comparison video with a human in the same location establishes the distance as about 65 feet from the camera and the size of the animal as similar to that of an adolescent human.



**FIG: 8.** 

Cropped frame numbered 02-15 from 720p HD digital video providing a less-obstructed view of the face of a juvenile animal. This frame has good "soft focus" and minimal motion blur as established by the resolution of the right eye of the squirrel in the foreground. Criticisms of "poor image quality" and "low resolution" are directly answered by the resolution of that eye on the squirrel given that the face of the larger animal is more than 1000 times larger! The camera has picked up the pink color of the inside of the mouth, and white nails are visible on the bent fingers of the animal's right hand. The details are visible in the original pixelation of the digital image as seen in this extreme enlargement.



#### FIG: 9.

Cropped frame numbered 05-13 from 720p HD digital video showing an adult animal well concealed by foliage. If the animal had not exposed the bright red inside of its mouth, it might have been dismissed as a shadow in the greenery. The squat nose atop a simian muzzle is nicely resolved. And like any real attempt at getting a nice portrait picture, the subject has blinked!

### NOTES

1. John Kosinski, "John Kosinski's Public Data," Figshare.com, https://figshare.com/authors/John\_Kosinski/691871.

2. John Kosinski, "2014 05 23 Independent Sighting by a Third Party," Figshare.com, https://figshare.com/articles/2014\_05\_23\_Independent\_Sighting\_by\_a\_Third\_Party/4868876.

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6. Kathy Moskowitz Strain, *Giants, Cannibals & Monsters: Bigfoot in Native Culture* (UK: Hancock House Publishers, 2008).