

What is a Biologist?

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What does it mean to be a biologist? Does it only mean to receive a biology degree? Probably not. I know a lot of people without a formal education who are intimately familiar with nature by working/living close to it. They are able to ask key questions and answer them with experiments or observations. As someone who has a biology degree, I see them as colleagues, even if there are no course credits involved. This situation, therefore, begs to the question, Who is the quintessential biologist, or in other words, what is the essence of being a biologist?

As with other definitions, it is easy to use the term, but hard to explicitly describe it into words. After a lot of thought, I came up with my own operational definition. A biologist is someone who loves, knows and studies nature.

The love of nature provides the initial motivation for all biologists. It translates into a desire for an activity that allows you to be close to it. Then, by formal education, structured learning or just by doing, you start knowing more and more. You begin to ask experts, read books, watch documentaries, attend lectures, etc. In the case of a formal degree, you start attending classroom lectures with many students and reading general science books. Then, the courses become smaller and the books more specific. At some point, you start reading technical reviews and primary literature. Small courses turn into one to one tutorials with professors and inevitably you reach the point where there are no more courses to take, papers to read or people to ask. You find yourself alone with your question and the only option is to directly ask nature.

I was pretty happy with my definition until my first year of graduate school when I saw a fragment of a [lecture](#) from the University of California, Berkeley astronomy professor Alexei Filipenko. It featured how science helps us to understand the natural world by enhancing its beauty. This idea made me think about my personal definition of a biologist from a different perspective.

A magnificent papilionid butterfly, a colorful reef fish, an elegant orchid or a cute baby lion. The pure perception of nature conveys beauty and amazement to the observer. It seems to be something innate to us as humans. But, on the other hand, the understanding of a particular phenomenon provides another kind of enjoyment. Knowledge gives a new appreciation of what you see. Things that at first seemed to be trivial become extraordinary. As you learn, everything starts making more sense until you find something that cannot be explained with the old paradigm. The excitement of finding a new Pandora's box corresponds to another flavor of enjoyment, one which appeals to a more basic instinct of exploration.

As an intellectual activity, research is rewarding and exciting, but many times it can also become difficult and frustrating. However, sooner or later, between data collection, analysis, trials and errors; nature finally decides to whisper into your ear one of its secrets. I would consider that intimate moment of enlightenment a delicacy that you can only taste when you have been seeking for answers. Finally, there is the enjoyment of serving as a bridge between nature and people by revealing your discoveries and facilitating others' exploration experience. You reach this, either by teaching on a class room, giving a talk for the general public, or just sharing your experience with someone else who happened to be hiking on the same trail.

Now, I realize that my personal definition can be summarized from three verbs into one statement. A biologist is someone able to appreciate nature at different dimensions of the human experience.

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Figure legend:

Emotional experience, learning experience, discovery experience. A biologist appreciates the beauty of nature at different dimensions of the human experience.