

On algorithms and assassin bugs: Challenging the uncritical promotion of nature identification apps

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It took an act of youthful carelessness for me to learn how technology was more a barrier than a bridge to experiencing nature. This was a lesson that took place in the warmth of late summer, nearly a decade ago.

My wife and I had travelled by train into the rocky heart of southern France, where an eighteenth-century farmhouse built of local white stone was to be our home for a week. The building was a habitat in itself – as a roosting site for bats, as a feeding ground for long-legged centipedes, and in other ways – but the principal attraction for us was the meadow in which the house was cocooned.

Up until the late 1980s, the surrounding land had been used to grow lavender, but a new owner's love of nature, coupled with his willingness to resist any intervention beyond an annual meadow-promoting mow, had seen nature rebound to an extraordinary degree. Within a quarter of a century, that aromatic monoculture – torpid and banal – had become a botanically rich paradise, supporting a complex society of invertebrates, and in turn drawing in the reptiles, birds and mammals that unfailingly come when life (if you can forgive a wintry metaphor in this French summer scene) is allowed to snowball.

We arrived at the farmhouse as the afternoon was giving way to early evening, and I eagerly set down my rucksack in the bedroom and took out a camera from within. Back outside, with the day's heat beginning to dissipate, the abundance of life had become almost overwhelming; yet, I retained sufficient faculties to point my lens at assassin bugs, hornets, shieldback katydids, burnet moths, wasp spiders, shieldbug nymphs, and butterflies of every hue (Figure 1). In a short time, I had burned through a battery's worth of photos, and I returned inside to dig out the charger and



Figure 1. Photographs by the author taken in France: top, an assassin bug; middle, a *Carpocoris* shieldbug nymph; bottom, a hornet feeding on a ripe fig.

spare cell from my backpack. Except that they were not there: my packing had been too hasty.

Hasty was a descriptor that could equally be applied to the way in which, on that first afternoon, I had experienced the multitude of insects, arachnids, and other manifestations of the ecosphere's unparalleled genius. While focusing on the task of taking photo after photo – in order to be able to put names, later on, to the diverse life forms – I had noticed almost nothing of the movements that had brought them to my lens, the distinct sounds that they made, the preferences for different microhabitats, the interactions between them, or the beauty of their simply *being*. I had obscured their elegance behind an ugly barrier. I had allowed my raw excitement to be swamped by regret for missed shots. And I had been only distantly aware of the divine scent and vibrant thrum arising from the larger organism that was the meadow. Thus, while the discovery of my careless error left me forlorn at first, I soon awoke to the opportunity that I had been given.

As my week in the meadow unfolded, I became more conscious of the sensory stimulants alighting in my nostrils and flowing into my ear canals. I became content with the familiar, rather than continually seeking novelty. I spent more time noticing, taking in the whole and the individual parts. I learned things from my new teachers: the goodness of figs, off the hornets; the value of entering the day slowly, off a western whip snake; and patience, from the predatory assassin bugs. I connected with nature on a deeper level.

After the trip, I began to reduce my use of the camera while experiencing nature. Within a couple of years, I reached a point where I was only packing it if my purpose was to make biological records for conservation bodies (as a bonus, I found that you could not forget equipment which you did not intend to take). And there was an additional development in my photographic behaviour: When I felt like I had intruded on a subject's personal space, I got into the habit of voicing an apology as I stepped away, for putting the species' prospects ahead of the individual's welfare.¹ But the world was going in a different direction. Digital photography was being combined with algorithmic processing in an ever-growing suite of nature identification apps. *Point-and-shoot* was becoming *point-shoot-and-know*. Knowledge, in other words, was being offered up without a need to wait or think. My attitude to all of this – in part because of my week in the meadow – was one of scepticism from the outset.

In questioning the use of such apps, the obvious route for me to have gone down would have been to criticize their accuracy. Indeed, I have previously had some fun with the limitations of computer intelligence in such domains as correcting people's writing and understanding musical tastes (Gray, 2021). But no. The case I am making is different, being simply this: By delegating the act of recognition to a digital algorithm, vital aspects of natural history, such as understanding the ecological setting and drawing on prior experience, are being bypassed; and, more importantly, the instinctive connection of human to non-human – the basic relationship through which biophilia flourishes – is disrupted by technological apparatus. The better that identification apps "perform", the more dangerous they become in this regard, as the need

for human awareness is diminished and the requirement for any critical assessment of the output is slowly eliminated. In parallel, as has been noted elsewhere, “their ease of use may actually act as a disincentive to gaining further knowledge” (Jones, 2020: 8).

In recent years I have had this kind of app pushed at me through my inbox, via the pages of magazines, and at nature-themed gatherings, and almost always the espousal has come without any acknowledgement of downsides. By way of illustration, here are some titles of online articles championing nature identification apps, not one of which contains even a hint of caution in its body text:

- “Twelve apps that will turn you into a nature expert,” proclaims a writer on the *TreeHugger* website (Heimbuch, 2018).
- “Six nature apps you need to have this spring,” I am told by the blog for the BBC’s lauded *Springwatch* series (Hitchings, 2017).
- “How to connect with nature using technology,” promises a piece in the magazine for *Countryfile*, another BBC programme (Howard, 2020).
- “Smart phone apps to help you enjoy nature,” offers an article on the website of the Natural History Society of Northumbria (Linley, 2020).

Here, and in other uncritical promotion of nature identification apps, we see various fantasies and fallacies at work: that the availability of instant answers offers an easy path to wisdom; that “smart” technologies will generally enhance, and not hinder, human experiences of the wider world; and that because you *can*, you *must*. At their best – for it is not all bad – such apps provide an efficient means of contributing data to citizen science schemes. At their worst, they sever connections between humans and more-than-human nature (it takes just one WhatsApp notification, say, to distract a user from the beauty, albeit one rendered in pixels, of a nectar-feeding butterfly). Actually, that is not quite true. At their worst, they can interfere with wildlife in quiet a cruel way: Birdsong apps are used by some so-called naturalists to lure birds for the sake of a sighting or a photograph, thus disrupting social dynamics and distracting the creatures from crucial activities such as nest-guarding (e.g. Jones, 2013). For the purpose of my argument, though, that is a low and unnecessary blow.

In closing, I will make a humble plea to anyone who cares about the practice of natural history, an appeal which, like the leaf of a clover, will have three parts. Let us never confound a capability with a necessity. Let us be wary of purported shortcuts to understanding. And let us question the intrusion of technology into our experiencing of nature, this primal facet of our lives on Earth.

Note

- ¹ For a thoughtful musing on the ethics of entomology, see Whyte (2020).

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Call for articles

- The issue of *The Ecological Citizen* that is planned for February 2025 will be dedicated, in part, to the theme of natural history. This has been described by Tom Fleischner as the “practice of intentional, focused attentiveness and receptivity to the more-than-human world.”
- If you are interested in contributing an article (either short or long) to the issue, then please get in touch with the editorial team via our contact form: <https://www.ecologicalcitizen.net/contact.html>.
- Please note that submissions will be peer-reviewed before acceptance can be confirmed.