Transforming College Students into Citizens of Planet Earth Through Eco-translation

Darryl Cameron Sterk

Abstract College students today are mostly alienated from the natural environment. As a result, they suffer from "plant blindness" and "nature-deficit disorder," putative syndromes that environmental educators have diagnosed and sought to treat with education. In this chapter, I show how educational eco-translation can help not only treat college students but also potentially transform them. I do so by describing a course entitled Eco-translation that I taught at Lingnan University on the 3Fs (the flora, fauna, and funga) of Hong Kong in the fall of 2023. In the course, translation embraced intralingual translation between a specialist's lingo and a non-specialist's vocabulary, interlingual translation between Chinese and English, and intermedial translation between visual and textual media. These forms of translation were ways of turning students into citizens of planet Earth, people who can appreciate the non-human creatures in the natural environment and act on the basis of such appreciation. I combined eco and translation into the course title for two reasons. First, ecology is the study of how the 3Fs act and interact, and how these actions and interactions produce the natural environment. Second, I agree with Michael Cronin that translators have a role to play in responses to ecological crises in the Anthropocene.

Keywords Eco-translation · Transformation · Pedagogy · Anthropocene · Chinese–English translation

In my observation college students today are mostly alienated from the natural environment. When given the choice, students in the English writing workshop I teach at Lingnan University in Hong Kong's New Territories often write about computer games, particularly in the past couple of years. Zoomers (members of Generation Z) have grown up staring at screens. As a result, most of them have particularly bad cases of "plant blindness" and "nature-deficit disorder," putative syndromes that environmental educators have diagnosed and sought to treat with education. Plant blindness (Allen, 2003) is the phenomenon where plants fade into the background, for

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instance in children's picture-based storybooks, where animals are the main actors. The animals in such books are usually not local animals, but animals that children are only likely to see at the zoo. These storybook or zoo animals may be the only animals children see on a regular basis, besides household pets and rock pigeons.

Nature-deficit disorder (Louv, 2005) is the idea that a lack of contact with "nature," however conceived, can compromise physical or mental health. Whether there is anything to that, a lack of contact with nature certainly leads to ignorance. When I ask my students to identify the most common plants and animals in Hong Kong, say, the macaranga (or David's heart) tree and the red-vented bulbul, they rarely have any idea. Plants they've seen, and animals they've heard, thousands of times, have never registered. This seems like an astonishing impoverishment of experience. It is a revolution in daily life within my own lifetime. I recall discovering nature in the ravine behind my house when I was a little boy; most children today do not have the opportunity to make any such discovery. It is also alarming in terms of contemporary local and global environmental challenges; we can hardly expect young people who grew up playing computer games to care about threats to biodiversity in their own backyards, let alone in faraway places. If they do not care, they are less likely to prioritize such issues in their economic or political choices.

In this chapter, I show how educational eco-translation can help not only treat college students but also potentially transform them. I do so by describing a course entitled Eco-translation that I taught at Lingnan University on the 3Fs (flora, fauna, and funga) of Hong Kong in the fall of 2023. I combined eco and translation into the course title for two reasons. First, ecology is the study of how the 3Fs act and interact. I hoped that translation students without a background in science could come to understand these actions and interactions, which produce the natural environment. Second, I agree with Cronin (2017) that translators have a role to play in forging connections in the formulation of responses to ecological crises in the Anthropocene, a proposed geological era in which the main driver of geological change is humanity. I dreamed of turning students into environmentally responsible citizens, not just of Hong Kong but also of planet Earth. I hoped students would come to appreciate creatures in the natural environment and eventually act on the basis of such appreciation.

A review of the literature in an attempt to find comparison cases revealed a lot of interest in exploring eco-translation as a paradigm of translation research (for instance, Daria & Cerarols, 2024). It also turned up a number of articles on a pedagogical approach inspired by eco-translatology (for instance, Hariyanto, 2021; Hu & Chalingha, 2024). In this approach, the translation student learns by adapting to a given pedagogical environment. One article (Zhai, 2019) described translation students' adaptation as multidimensional transformation. But the translation courses students were adapting to had nothing to do with the subject matter of biological ecology.

I did, however, find an article (Kölling & Lieb, 2022) about a course-based attempt to teach eco-translation, subtitled "reclaiming the climate crisis discourse in the time of coronavirus." The idea was that attention previously directed at the climate crisis has been redirected during the pandemic, with a resulting watering down of green

policies that no longer held such strong appeal for voters. The authors are very concerned about environmental politics in Germany. They did not mention the invasion of Ukraine. Regardless of what issues hog the headlines, or preoccupy politicians, Kölling and Lieb's response was indirect: to teach a course in eco-translation at Mainz University in winter, 2021. The article is an account of the plan for the course and how it went. The course design reflected the backgrounds of the instructors in Indigenous studies, British studies, intercultural German studies, and eco-translation (p. 178).

The instructors aimed at "critical environmental epiphany in the everyday commonplace" (p. 180). They walked around with four students and looked at living things. The instructors didn't always know (much about) what they were looking at, for instance daisies or honey locust trees, let alone why these creatures happened to be on campus. Their expertise lay in providing students with theoretical perspectives that could inform projects, which took the form of essays. These project essays formed part of portfolios that also included haikus (p. 183), reflecting the instructors' interest in ecopoetics. But the ecopoetical purpose was to motivate political action on the climate crisis. The instructors were troubled by students' failure to see what they'd done in the course as political (p. 186).

In this chapter, I describe another approach to a college course on eco-translation. I will cover my plan for the course, the kind of evaluation I did, and the response I got. I will attempt to answer the following research questions: What did students find challenging and interesting? What ecoknowledge did they acquire? What suggestions did they have? What room for improvement is there? Can a course like the one I have taught transfer to another locale? Could it really prepare translators for the demands of paid work, let alone give them the eco-awareness they need to be global citizens in the Anthropocene? Was I, as a translation practitioner, able to be an agent of transformation in a multicultural setting?

To answer these questions I have adopted an eclectic methodology, that is narrative, discursive, and even to some extent quantitative. I will rely on my own memories, on class photographs, on e-mails I sent to the class or individual students, on the contents of the course page on Moodle, on the Excel file I used to calculate marks, on videos I posted to YouTube, on quizzes I designed on Google Forms, on iNaturalist observations I required students to make and present on, on anonymous student evaluations submitted at the end of term, on excerpts from the final examination, and on follow-ups with students who took the course by e-mail half a year later.

Before proceeding to a description and evaluation of the course, I would like to give a bit of my background to let the reader know where I am coming from, just as Kölling and Lieb (2022) shared aspects of their own backgrounds.

The first follow-up I did for my childhood experiences in the ravine, mentioned above, was in my mid-twenties, when I took a couple of college-level biology courses, not because I wanted to learn about nature per se but because I thought I might become a naturopathic doctor. I became a freelance Chinese–English translator instead after a couple of years in Taiwan, and whenever I translated texts that broached biology, my college-level training in the subject came in handy. About a dozen years later, I translated a novel entitled *The Man with the Compound Eyes* (Wu, 2013) by the

Taiwanese nature writer Wu Ming-Yi. In the novel hundreds of species are mentioned. I diligently looked bionyms—biological names—up on Wikipedia and found some way of translating them (see Sterk, 2019). But for the most part I could not have identified most of the species in the field. I felt ashamed of myself. I only acted on my sense of shame a half-dozen years later, by which time I had relocated from Taiwan to Hong Kong. In Hong Kong I heard of an environmental education NGO called OWL, short for Outdoor Wildlife Learning. Co-founded by Xoni Ma, who holds a doctorate in environmental education (Ma, 2016), OWL has programs at all levels of education. OWL teachers visit primary and secondary schools, and take adults like myself on guided tours. I have taken Cantonese-language OWL courses in plants, herps (amphibians and reptiles), dragonflies (and damselflies), butterflies, spiders, river ecology, and shore ecology. I have participated in an OWL-run citizen science study of pollinators, and another on fireflies. I have hired a nature guide to give me a crash course in birding. The main principle that these courses taught me was that a naturalist's knowledge is built by familiarity with family resemblances. Not all plants in family Rubiaceae, the coffee family, have opposite leaves with interpetiolar stipules, but enough are that these two characters are diagnostic.

At some point I got it into my head to try to combine environmental education with translation. The result of this brainwave was TRA 4327: Eco-translation, which I taught in the fall of 2023. Institutionally, this was a course in the Department of Translation, hence the codename TRA, and it was supposed to be an elective for third and fourth year translation majors, who have to complete electives as a program requirement. Electives, like most undergraduate courses at Lingnan, are typically of thirteen weeks in length, with three hours per week split into two classes: one a two-hour lecture and the other a one-hour tutorial. Lingnan brands itself as a Chinese liberal arts college, but is strong for its size in social sciences, business, and, most recently, data science. It also has a science unit, which offers a highly respected Master's program; it is a center of herpetological studies in Hong Kong. The science unit offers a core curriculum course with some overlap to the one I proposed, CLD 9018: The Natural History of Hong Kong, taught by Professor Jonathan Fong. In case I was encroaching on Jon's turf, I wrote to tell him about my plan for a course in eco-translation, and he had no problem with it. To offer the course, all I had to do was persuade colleagues in my department that eco-translation would be a good addition to the program. In my pitch, and in the draft syllabus, I described eco-translation as a specialized translation course, even more specialized than TRA 4310: Translation for Science and Technology. Eco-translation would focus on natural science translation. Furthermore, I promised that the course would teach students to see a given species from different perspectives by translating different kinds of texts, including: technical descriptions of morphology and ecology, subtitles of nature videos, ad copy for plant- or animal-based products, including pharmaceuticals and nutraceuticals with accounts of biochemical mechanisms, environmental protection legislation, and environmental impact reports for developments. As you will see if you follow me through to the end, my scope narrowed after the course got started.

In the course, translation was most obviously interlingual translation. In the course design, students had to translate short texts about local creatures from Chinese to

English or English to Chinese. Chinese here meant Mandarin, but also to a very limited extent included Cantonese, in that local flora and fauna have local bionyms which may be different from Mandarin bionyms. The garrulous masked laughingthrush (*Garrulax perspicillatus*) is called "seven sisters" (七姐妹) in Cantonese, but "black-faced laughingthrush" (黑面噪鶇) in Mandarin. To some extent, translation also included intermedial translation between visual and textual media. I was going to give students pictures and ask them to describe them in Chinese or English; or I would give them texts and ask them to sketch certain morphological features. Finally, translation also meant intralingual translation; I planned to get students to translate technical descriptions into terms that laypeople might understand, and vice versa; students had to take a description of a character that a child could grasp and supply the technical term.

Some background on the situation at Lingnan University and Hong Kong will help readers put the following account in context. Hong Kong originally formed through volcanic activity, but residential Tuen Mun, where Lingnan is located, formed through the deposition of sediments by sea-bound streams. The campus itself is built at the foot of a hill below a small reservoir, and contains a much smaller hill. Except for the plants on that hill, almost every plant on campus has been planted and maintained to beautify the environment; many of the plants are as a result exotic ornamentals, attractive plants that are not from Hong Kong. There are enough trees on the hill to attract a small variety of local birds and to support populations of insects and spiders. There is a pool of red-eared slider turtles, but herps are few and far between. You can get an idea of the biological profile of the campus by exploring iNaturalist here: https://tinyurl.com/4tp26mrv.

Tuen Mun is in a drier part of Hong Kong, and the view from Siu Hong MTR (subway) station I exit to access the campus is of hilly terrain bordering a broadly rectangular urban area. The terrain ranges from grass to shrubs to woods; slopeland fires have prevented the regrowth of forest in this part of Hong Kong. Throughout Hong Kong, most trees were felled during the Second World War. To prevent erosion and flooding, drought tolerant trees, many from Australia, were planted in the 1960s and 1970s, and many native species have come back; but the best spots to observe native species are ironically *fung1 seoi2 lam4* (風水林), woodlands that villagers tended until the second half of the twentieth century. Hong Kong is sub-tropical, but tropical species can live in the lowlands and temperate species can live at higher altitudes, on mountains that top out at nearly a thousand meters above sea level. For a general introduction to the ecology of Hong Kong, see Dudgeon and Corlett (1994).

Once the course was scheduled for the fall of 2023, the first requirement to fulfill before it could actually run was convincing ten students to take the course. Ten students is the minimum at Lingnan, and nine students were registered as of the first day of class. So after introducing the course I asked students to ask their classmates to take the course. I literally got down on my hands and knees. First-year and second-year students were welcome, I announced. I declared I would take special care of first-year students. It would not be a capstone course after all, not if I wanted it to run. The response was to some extent overwhelming. By the following week, there were more than twice as many students; twenty students were registered, fully half

of them in first year. The classroom felt cramped, but there was no alternative space to move to. Not all of the students were even translation majors; six students were from the Faculty of Business. I suspect that one of the translation majors in the class asked a Business-major friend, who spread the word. Two students were not even Lingnan students, except in that they were on exchange. But they were registered in the course, and the course would run.

I would have to make adjustments to accommodate all of the eighteen-year-olds, who probably were not ready to translate environmental protection legislation, or anything to do with biochemistry. I would have to make the course as easy and as engaging as possible for students in their first year of university. College entrance exams in Asia are extremely stressful. Asian students who enter tertiary education are often exhausted even months after passing these exams. I did not want their first experience of university to be too demanding. I see my role as a professor in general as getting students interested in a subject and encouraging them to think, argue, or communicate about it in a low-stress environment.

How did I adjust the course for this kind of class? I basically modified the OWL approach. The OWL approach included lectures on different kinds of creatures and outings to look at these creatures in situ. Lectures were two hours and outings were either half-day or full-day. I couldn't expect to hold student attention for a two-hour class, and did not have a half day to spend with students, let alone a full day. So I tried to spend as little time in the cramped classroom as possible. After a short PowerPoint-based lecture, I took students out onto the campus to see what we could observe. As a result, rather than two hours for the lecture and an hour for the tutorial, I spent an average of an hour lecturing and two hours in the "field" per week.

Another way in which I modified the OWL approach was to make it more Socratic, by asking as many questions as possible. In an OWL course on butterflies, I had been told in the lecture about hilltopping. This is an instinctive behavior for many butterfly species when they are ready to mate. The density of a given kind of butterfly in a habitat may be too low for butterflies to reliably be able to find mates, but if they tend to fly uphill instinctively, then a lot of butterflies will end up together. One of the outings was a trip to a hilltop, where, as expected, we found a *lot* of butterflies. It was a thrill to see them, but it seemed to me that a Socratic approach might be even more satisfying.

To make my presentation Socratic, I showed pictures of butterflies students were likely to see on campus and invited them to comment on coloration and morphology. I nudged them towards noticing the shape of the antennae and the wings, the arrangement of the color blocks on the wings, and the number of pairs of legs; brush-footed butterflies only have two pairs, unlike a typical insect. When I thought we were ready, I took them out of the classroom and up the campus hill, where we found an adequate number of butterflies; there were at least more butterflies at the top of the hill than at the bottom. There were a few kinds of butterfly that students were able to recognize, including the most common butterfly species in Hong Kong, the red-base jezebel (*Delias pasithoe*). Then I drew their attention to the "fact" that there were more butterflies on the hilltop. I asked them to come up with a methodology to quantify that fact, for instance, by counting the number of butterflies that fly by

Fig. 1 Orchid tree leaf with a cordate base (© J. M. Garg CC BY-SA 3.0)

in a given period of time at two different sites. If we could prove quantitatively that there are indeed more butterflies up here than down there, the next question would be: Why? Students came up with a number of different reasons. Maybe it was safer on the hilltop. (*Wouldn't predators figure out where lunch was?* I said.) Maybe they wanted to get a suntan. (*I think you're anthropomorphizing those butterflies*, I said.) When the question and answer seemed more frustrating than enlightening, I invited students to anthropomorphize, but in a different way. When did they get together as young people and why? Pretty soon someone suggested going clubbing, in order to meet attractive members of the opposite sex (or the same sex, as the case may be). This, I suggested, was what the butterflies were doing there. For the butterfly, the situation is complicated by a particular kind of danger; club-goers are not usually in danger of being eaten. (Some of the students laughed.) When this more Socratic approach worked, and sometimes it did work, I felt that I was playing my role as educator effectively.

Another way in which I modified the OWL approach is to highlight translation. In every lecture in the classroom and tutorial on or off campus, I invited interlingual translations or offered them. In almost every class we translated a technical description of some species or other. In translating terms, I compared the register of terminology in English and Chinese, where English terms tend to be from Latin or ancient Greek and test people's ability to etymologize; cordate is cognate with cordial and means heart-shaped, while the Chinese term simply means heart-shaped, so it seems to be of lower register. Both terms could be translated into even lower register, along the lines of: shaped like a heart. This would count as an intralingual translation, within a language. And drawing a heart shape would be an intermedial translation (Fig. 1).

Yet another way in which I modified the OWL approach is to divide the living world into manageable units on evolutionary or scientific grounds. Just as OWL has different courses on plants, herps (amphibians and reptiles), butterflies, and so forth,

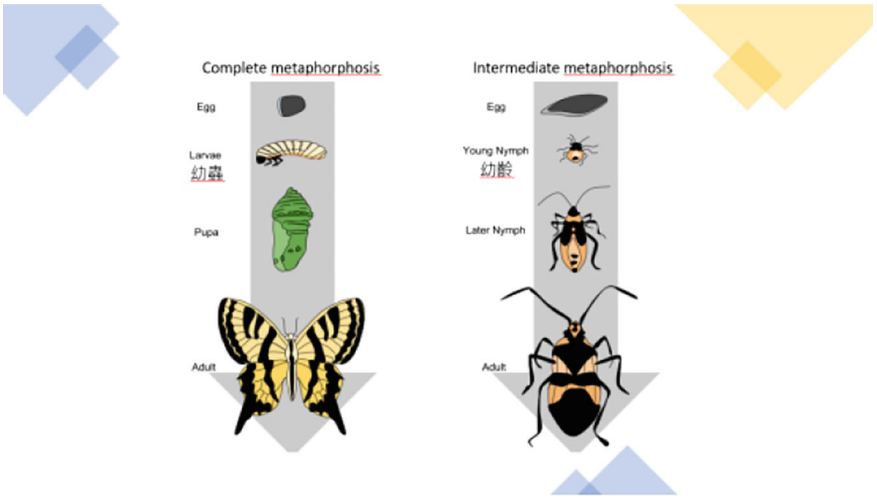

Fig. 2 PowerPoint slide on the life cycles of the two main kinds of insects (by the author)

Fig. 3 PowerPoint slide on the nine orders of insects (by the author)

so I divided the course into units on such areas of knowledge. I started with plants, because they are the easiest to observe on or around campus in the narrow time frame of a class. Then I moved onto animals, in this order: herps, birds, and inverts, short for invertebrates. I prepared a slide deck for each lecture. Figures 2 and 3 are a pair of slides from the insect section of the PowerPoint on inverts.

There is minimal translation in the slide, but I invited students to guess the terms for complete and intermediate metamorphosis, and someone guessed right. The slide

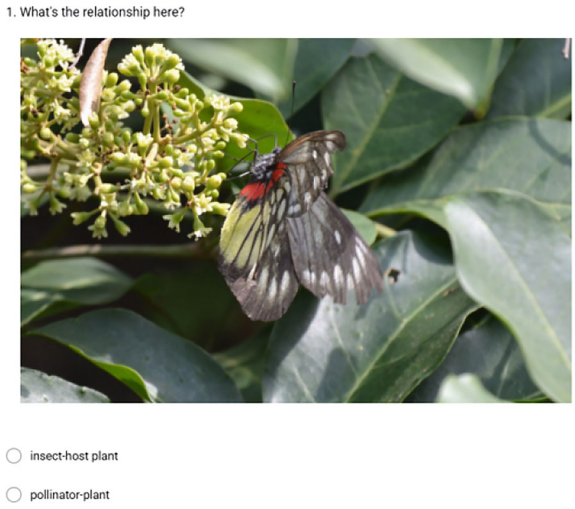

Fig. 4 A question from a quiz on inverts in TRA 4327 (by the author)

was also an opportunity to review the translation of "egg" into Chinese, which has two common words for egg, *luǎn* 卵 and *dàn* 蛋. English has two common words, too, eggs and roe, but the distinction is different. Although usage is complicated, the distinction in Chinese is basically between animals that lay eggs without an amniotic membrane in water (*luǎn* 卵) and animals that lay eggs with an amniotic membrane on land (*dàn* 蛋). Note that usage is complicated in that, for instance, an ovary is called a 卵巢 *luǎncháo*, an egg nest, not a *dàncháo*.

In this slide I drew students' attention to the four orders of insect represented by wasp, fly, butterfly, and beetle. These are the four orders that undergo complete metamorphosis, the ones that pupate. They are also the ones that pollinate plants, and it is almost certainly because of the relationships that these insects have formed with plants that they have evolved in this way.

Having taught a given topic in the classroom and reviewed it in the field, I would make a video to help students review. I would get a verbatim transcript using an online service called Sonix, and then upload the video to YouTube, substituting my transcript for the automatic transcript YouTube produces for the subtitles. Here is one of the videos on inverts, linked to where I talk about the two kinds and nine orders of insects: https://tinyurl.com/4ffrybrk.

Having taught this material in the classroom and revisited it in the field, I had to test it in the following class, to see if I had taught it effectively, or in other words if students had absorbed it. I tested students at the beginning of the following class with an online quiz, which doubled as a way of taking attendance and which I designed on Google Forms. Figure 4 is a screenshot from one of the quizzes on inverts.

In another question on this quiz, I asked them what kind of plant it is. You are welcome to take the quiz yourself: https://tinyurl.com/2z2a5d5a. For the quizzes on frogs and birds, Google Forms allowed me to incorporate sound files of calls in

Fig. 5 An inchworm in a dorm room at Lingnan (photo by Jessica Duan, used with permission)

addition to pictures. Any naturalist knows that you hear such creatures as often as you see them.

I made the quizzes as easy as possible, and the above question may seem like a "no-brainer," but students managed an average of 65% on all the quizzes, with an individual range of 46–82%. Partly this disappointing result is due to attendance; if students did not come to class, they got zero. But there is room for improvement here if I get the chance to teach the course again.

I invited students to send me e-mails if they noticed anything interesting. Not that many students did this, but once in a while I received an interesting message. For instance, on 30 October, 2023, one student sent me an e-mail containing the picture with a textual description of what she had observed (Fig. 5).

She wrote, "Its feet have a firm grip, able to grip my clothes tightly. It takes me a while to take it off gently." Her friends were interested in this "baby," too. I observed that the head, and the three pairs of insect legs are on the righthandside, while the legs on the lefthandside are "false legs" that allow this style of walking in two families of moth, Geometridae and Noctuidae. I uploaded the photo to iNaturalist and quickly got an id. It is a geometer moth, whose caterpillar "measures the earth" with each step.

Another student wrote about a term that had come up in a translation exercise in another class, 荷葉梗. She wanted to translate it as "lotus petiole," which is botanically correct, but her teacher recommended "lotus stem," which is botanically incorrect but easier to understand. I recommended "lotus leaf stalk" as a compromise.

Leaving the classroom involved numerous difficulties. Students may not want to go out in the rain, or the hot sun. It can get extremely hot in Hong Kong, well over thirty above Celsius, even in autumn. Even if I could persuade students to go out, they might not want to hike up the hill, even if there was the chance of seeing a bunch of butterflies. Plants are relatively easy to observe, for obvious reasons, stated above. The particular kind of animal we wanted to see might not be active at that time of day; classes were held in the late morning, so the only herps we were going to see were the turtles in the pool in front of the auditorium. Even if we managed to spot a kind of butterfly or bird, it usually flew too far away for students to observe without special equipment. Students had only smartphones, not mirrorless cameras with long lenses or spotting scopes. Halfway through the course, I gave each student a hand lens to use to observe tiny details that might be the basis for discrimination

of one species from another or to take pictures of these details, but I failed to work the lenses into the pedagogical design; in other words I didn't demonstrate how to use them or require students to make and share observations.

Going off campus was a possible solution to at least one of these problems, but involved further problems. I took students to the southern gate of campus and then uphill, so that we could trace the closest stream to see dragonflies and damselflies, but simply getting there took twenty minutes, as would getting back, a significant chunk of class time. I took students to the nearest park, which contains a reptile house. Visiting this house was an opportunity for an activity: translating descriptions of reptiles as we stood right next to them; but students did not want to walk down to the nearest light rail station, and we had to wait quite a while for the bus, which was slower than the light rail would have been. Class time was basically cut in half. I took students to a local wetland park, where they would have the opportunity to observe river and shoreline ecology, including mangroves, but which is farther afield. I thought I would try taxis there and back, and ordered one too few assuming that one of the students would be absent that day. Nobody was absent. Twenty students shared five taxis. I had to wait an agonizing five minutes before an empty taxi passed. For a final outing, and at a significantly higher expense, I hired the eco-tour guide I had worked with before to take us up another stream at night on Lantau Island. This time, with support from my department, I rented a minibus. Alas, only half of the students showed up, but I had invited students to invite their friends. That was another highlight of the course; we saw several kinds of snake and frog, including the venomous bamboo green snake and Romer's tree frog.

Anytime we got close to nature, whether on campus or beyond, I had to help students overcome what one of them called the "ick factor." If you are not interested in a certain kind of insect, it might just seem like a "creepy-crawly," which is to say a creature you want to stay away from. I was happy when students confided that they did not find inverts icky anymore. The student who sent me the e-mail on October 30 also reported, "It is also surprising that I am not afraid of [the inchworm] at all! I think the courage may come from the experience of exploring outside at night a couple of weeks ago."

Every time I took students out of the classroom, I encouraged them to take photos and upload them to iNaturalist. To do that, each student needed to open an account on iNaturalist. Each observation on this platform includes photos, a time, and a location. I laid down some ground rules. Each observation should clearly be of one individual. Each photo had to serve a different purpose: for instance one for the entire plant, one for the bark, one for the petiole and stipules, one for the leaves, and one for the flowers if any. I wasn't expecting students to submit photos with me in them (Fig. 6).

Then, twice in the term, we spent an hour on student presentations. Students had to choose one observation in particular and present on it in a way that brought together interlingual, intralingual, and intermedial translation. They had to do some research on a local platform, for instance Plant Babies (柴娃娃), an online database containing all of Hong Kong's four-thousand-odd plants that is itself a work of interlingual, intralingual, and intermedial translation. For the first presentation, students did a

Fig. 6 The author presenting on *Bridelia tomentosa* in the blazing hot sun (by Jessica Duan, used with permission)

plant, for the second an animal. Some students went above and beyond, particular as concerns intermedial translation. One student uploaded a drawing (Fig. 7).

Another student made a video using a freeware called Procreate (Fig. 8).

For many students, an approach that combines visual and textual learning is more effective, and I should emphasize this more next time I teach the course. This time, I asked a professional environmental illustrator to come in and give an hour-long hands-on presentation, but a one-off encounter with illustration is inadequate. To teach students this kind of intermedial translation, I will have to learn something about illustration myself.

For each of the presentations I had the students do, I did a presentation of my own in the previous class to demonstrate what I had in mind. I then made a video about it, for instance, here: https://tinyurl.com/3x4wu6yz. In the presentation I noted the vulnerability of the species of firefly I was presenting on to climate change, an attempt to link the local to the global. I marked the presentations generously, an average of 79%.

As mentioned above, one of our classroom activities was interlingual and intralingual descriptions of species I hoped that students would be able to recognize in situ. I developed this activity into the questions on the final sit-down examination, in which I chose five of twenty-five texts that students were given to practice on and prepare. Here is a playlist of videos of my model answers for the inverts translation: https://tinyurl.com/yjn4webf. Here's an excerpt from a translation of a description of a spider:

> The ant-mimicking jumping spider is a small little spider with a body length of only four millimeters for the males, and about six millimeters for the females. They are gorgeously colored. They have gorgeous coloration, and they have especially eye catching blue and orange pattern. So there's the blue and there's the orange [in the photo]. And like most spiders, they've got this rainbow-colored metallic sheen. S-h-e-e-n. And if you want to tell males and females apart, it's not that hard. It's actually easy. The coloration of the females is

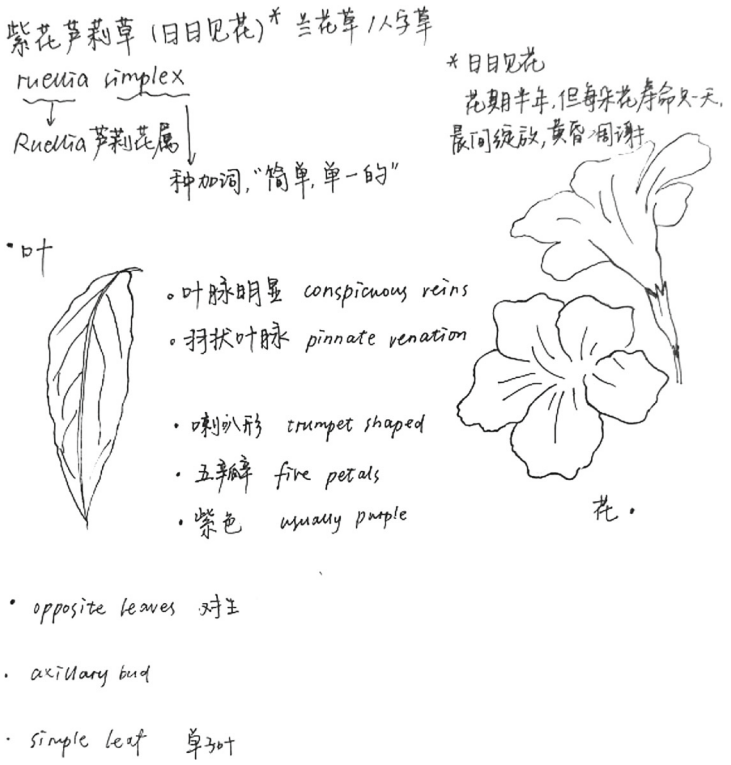

Fig. 7 A highlight of a presentation on *Ruellia simplex* (by Jessica Duan, used with permission)

Fig. 8 A still from a student video about the lifestyle of a kind of butterfly (by Lydia Li, used with permission)

> usually not quite as brilliant or bright. They're not quite as brightly colored, but in addition to color, you can also rely on the hair on the forelegs, the front legs. The males have front legs that are densely covered in setae, and that's kind of like hairs that are pretty stiff. They're like stiff hairs. And then they're in a kind of tassel shape, and it helps them in appealing to mates. So when they want to have a girlfriend, you know, 談戀愛, when they want a mate, then they hold these things up and I guess it impresses the girls.

As you can tell, this is an informal interlingual sight translation containing terms like "setae" and intralingual translations of these terms into everyday language, with the kind of banter one can expect from an eco-tour guide. This is the kind of translation I told them I was expecting on the final. All of the translations students had to practice on were Chinese to English, but I informed them that two of the five questions on the final would be backtranslations from English to Chinese.

The actual exam contained a prompt to remind students to translate intralingually for two different kinds of audience, for instance in the translation of the description of the macaranga tree, students were asked to explain how they would translate 全緣. Here is a typical, middle-of-the-pack explanation: "The margines [sic] or the edges of the leaves are entire, meaning smooth." Except for the spelling mistake, I couldn't improve on this translation myself. Here is an excerpt from the student's translation of the entire paragraph:

> This plant is called macaranga. It is in Euphoribaceae [sic] or in the spurge family. It has an arboreal growth habit. It is a tree. It grows to five to ten meters tall. The young branches, the young leaves and stipules which are protective leaves are all covered by a yellow brown fuzz. It is a [sic] pilose which is softly fuzzy. The branchlets are thick and strong. They are hairless or glabrous. They are covered by a white bloom. The leaves are papery. They are ovate, shaped like an egg. It [sic] is 14 to 17 centimeters long and it is 14 to 24 centimeters wide. The apexes [sic] or the leaf tips are acuminate, meaning the top of the leaves comes from [sic] a point. The bases of the leaves are obtuse or blunt. The leaves are peltate, so the petiole or the leaf stalk attaches in the middle of the leaf. It is densely covered in grandular [sic] or [sic] glands which make sweet staff [sic] for ants.

The student could have added that the sweet "exudate" is like protection money for the mafia of the natural world, the ants, which refrain from damaging leaf tissue and protect it from caterpillars. As it stands, this is a decent translation for an ESL student; despite the spelling mistakes and grammatical errors, it basically makes sense, fulfilling the communicative function. The particular student got 16.5 out of 20 on this question, and 70% on the entire exam. The overall average on the exam was 72%.

The quiz, presentation, and examination averages of 65%, 79%, and 72% respectively may indicate that I am an easy marker, but to some extent they also measure linguistic and specifically translation competence and the background knowledge that the course was supposed to encourage students to develop, as I have detailed in the above description of it. There is definitely room for improvement on my part here. I can try, as every teacher does, to be likable, organized, and engaging. I have to try to improve the quality of the review videos that I make for students, which are admittedly amateurish. Students do watch the videos. I got 80 views for my video on the second ecopresentation, about four views per student, but the average watch

time was only 15%; viewers watched on average 47 s of a 309 second video. I should do better than that. I can hardly compete with YouTubers and TikTokers, but I can at least aspire to the production values of videos produced by Khan Academy, an American educational non-profit.

My CTLE (Course Teaching and Learning Evaluation) score for the course was 5.15 (based on evaluations submitted by 11 of 20 students), which was below the university mean of 5.26 and the score I received on the other course I taught that term, 5.54. Only 67% of the respondents felt the course was useful. 64% said it had contributed to their learning experience at Lingnan. Partly this is because I was teaching the course for the first time. But in the comments students gave me some ideas about other things I can improve about the course. One student wrote that I should do "*more* translations" (italics mine). It is a rare student who wants a heavier workload, but I will keep the suggestion in mind, perhaps by including other sorts of eco-translation besides technical descriptions. Another student expected me to supply lecture notes, instead of teaching from mostly visual slides. Next time I teach the course I can consider requiring students to take notes that they have to show me at the end of term as part of the final grade. The same student claimed he or she had not learned any "translation techniques" from the course. I will have to reiterate that intralingual translation or paraphrase can be considered a translation technique. I apparently spoke too much Mandarin in the class. In future I can draw attention to my decision to speak in Mandarin, and ask a student to translate what I just said into English. These were the only critical comments I received. It is always nice to get positive feedback as well. One student wrote, "the amazing teaching style and methods of tutor [sic] intoxicated me."

Did I manage to turn my students into naturalists? Excluding one student who appears to have deleted her account, 19 students made 317 observations on iNaturalist, or about 17 per student, and 15 more than they needed to make to fulfill the course requirements. This is promising. Since class ended 13 students have not made any observations, while 6 students have made 43 observations. This, too, is promising.

Can a course like this transfer to another locale? It really depends on the weather. Where I grew up there would have been little to look at in the field beyond October and before March. Otherwise, I cannot see why not, if instructors are sympathetic to the overall approach and capable of implementing it. In winter in Mainz, students would have to wear warmer clothes than they were used to (Kölling & Lieb, 2022, p. 179).

Could it really prepare translators for the demands of paid work, let alone give them the eco-awareness they need to be global citizens in the Anthropocene? Was I, as a translation practitioner, able to be an agent of transformation in a multicultural setting?

To answer these questions, I turn to the feedback I received from five students via a survey I designed on Google Forms six months *after* the course had ended. All five agreed that they pay more attention to flora and fauna around them as a result of the course. If they don't recognize what they see, they analyze characters and use iNaturalist. One student wrote, "Once I saw a bird, I immediately knew that

it black-collared starling, it was really meaningful to me." Another said she would identify plants and animals for her friends. "They're so impressed," she wrote. Yet another student wrote that before the course she had paid little attention to nature, but after taking the course she has "a strong desire to learn more about the plants, their leaves, their flower seasons, their habits …." While students expanded their vocabularies and learned "the general translation process and the names and habits of many animals and plants," they had not used this newfound knowledge in other courses or in work. But it still seemed potentially useful to them. Students differed on whether to add additional kinds of texts. One thought such an addition would make the course more interesting, but another wrote, "For environmental issues, I think students are exposed to many information related through other like common courses offered by the university enough. And it is not difficult for us to get in touch with those information. But for the specific flora or fungi, first of all, it is difficult for us to start from the basic information from our own. That is also what makes this course special: really learn to recognize the specific plant or species and learn about the characteristics of that kind."

In sum, I think in a few cases I have planted seeds of curiosity about the natural world in undergraduate minds, and that this is the most that can be expected, and my highest aspiration. How such seeds might grow into political action is an overdetermined topic, and not one I wanted to devote much class time to. But having read the article by Kölling and Lieb (2022), I think I could do more to contextualize what I am teaching and relate it to larger issues of biodiversity and climate change, to link the local to the global as I put it above. Such contextualization might help motivate students to get informed and engaged. Informed and engaged, they would be on the way to becoming citizens of planet Earth.

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