



THE OUTSTANDING STEPPING STONE ANDREW HIGGINSON

I gained a B.Sc. in Behavioural Science from the University of Nottingham in 2001 and remained there to achieve my Ph.D. on the behaviour of foraging bees. This largely involved sitting amongst lavender bushes in the beautiful sunshine of a Portuguese spring. After a break in 2006 working on the organic farms of western Canada, I became an Associate Lecturer at the University of Derby. Two years later I moved to start my first postdoctoral position at the University of Glasgow, becoming predominantly a theoretician of anti-predator defences, but indulging an unforeseen interest in caterpillars and cabbages. My transition to full-time theoretician came with my arrival at the University of Bristol in 2010, where for four years I have been concerned with the evolution of psychological and physiological mechanisms that control behaviour. During my tenure at the Wissenschaftskolleg I interviewed for and was awarded a UK Natural Environment Research Council 5-year Independent Research Fellowship, beginning at Bristol in January 2015. – Address: Life Sciences Building, University of Bristol, Bristol, BS8 1TQ, United Kingdom. E-mail: adhigginson@gmail.com

A theoretician's life is littered with half-finished projects: completed computer code waiting to generate results, almost-ready code with inscrutable bugs, results waiting to be interpreted and manuscripts waiting to be finished. Whilst I suspect that most academics have a problematic ratio of tasks to time, a theoretician with a reputation for excitability about any problem described to them in a café or bar is likely to put themselves excessively in such a situation. I am therefore especially susceptible to the consequences of having more projects and collaborators than time. I arrived at Wiko with a challenging

gaggle of nearly finished projects and revelled in the wonder of having the time to revisit, rationalise and tidy up my backlog. These projects included *Florivory as an opportunity benefit of aposematism*; *Reduced fecundity as a cost of group size through scramble competition and costly anti-predator defences*; *Cognitive biases in anxiety as a by-product of an adaptive threat detection system*; and *Foraging mode switching: the importance of prey distribution and foraging currency*. Bidding farewell to these projects gave me the headspace to indulge in my proposed project, which will form the foundation of my future work.

Having a grandiose title for one's project – such as *A unified theory of individual variation in collective behaviour* – starts the year off in an optimistic manner. I am interested in how social animals (including humans) have evolved to differentiate themselves from other group members – in personality, abilities or preferences – in order to improve group performance. A foundation stone of this work is the idea neatly captured in the adage “jack of all trades, master of none”, or even more neatly (of course) in German “Ein Multitalent kann vieles, aber nichts richtig”. A group of individuals, such as ants, should face the problem that specialisation increases productivity, but too much specialisation can lead poor performance on other tasks. It was somewhat disconcerting, therefore, to quickly realise that the staff and Fellows of Wiko violate this simple axiom. They all manage to be simultaneously world leaders in their speciality whilst having a range of other talents (it's remarkable how many excellent pianists a grand piano tempts into the light) and a stunning breadth of knowledge about any topic arising over dinner.

The speciality of the wonderful staff of Wiko is to simplify Fellows' existences. It has never been so easy, and probably never will be again, to focus on one's research. I took advantage of a carefree existence to read thoroughly on my subject, gathering the primary literature around me on desk, sofa or grass. It is likely that any Fellow succumbs to the temptation to test the specialisation of the libraries, and I confess that I chose to read some obscure or rare books that Wiko's amazing library sourced at a moment's notice. I found that no problem was too much trouble for a smiling administrator, no matter how hard I tried! The only distraction that Wiko must accept responsibility for was the ever-changing wonderful food appearing magically from the kitchen. Yet, despite this level of specialisation, it remained true that whichever member of staff I talked to – librarian, accountant, caterer or administrator – I would discover another talent or interest of note to undermine my faith in my project's foundations!

My Wiko project served as the preliminary work of the plan for my five-year independent research fellowship. I developed several preliminary models, including

predicting how ecological variability might affect the number of soldier ants in colonies; what level of pollen specialists we expect among honeybee foragers; and how group decision-making might cause there to be relationships between personality traits, such as exploratory behaviour and social responsiveness. The intellectual immersion in doing these projects was instrumental in my confidence and performance at my fellowship interview. I will forever be grateful to the College for Life Sciences Fellows and Giovanni “everything is possible” Frazzetto for their cheerful discussions of my work and helpful feedback on my repeated practices of my interview presentation and for inspiring me to have confidence in my abilities. I was boarding my flight back to Wiko when I picked up the good-news e-mail, coming back to the perfect timing of the special College for Life Sciences colloquium, where I received the warm wishes of the audience and celebrated with new friends who had been so instrumental in my success.

My contribution outside my main specialisation was the instigation of Monday Club, a loose informal gathering of the College for Life Sciences Fellows between dinnertime and bedtime on a Monday (mostly). These evenings invariably started out with all the best intentions of reading, writing and asking advice on presentations and plans; and slowly and surely morphed as midnight approached into the pleasantest of chats with friends over a bottle of red. These evenings were fantastic for solidifying relationships among the College for Life Sciences Fellows, who for the most part came to Berlin alone (unlike most other Fellows) and so benefited especially from social events, particularly on the cold winter evenings! Monday Club took place in that grandest of communal spaces: the Clubraum. Increasingly, I found myself walking around in there in my socks, the better to maintain the impression that I lived permanently in this gorgeous mansion. I did a great deal of relaxed reading next to the grand windows, browsing the Fellow library and indulging in endless academic arguments about anything and everything. As a lounge in one’s house, it was difficult to beat in its appeal! It seemed to me to be Halls of Residence in paradise: the large and comfortable rooms, the interesting dinner companions and the absence of rowdy behaviour in the corridor (mostly ...).

The Wissenschaftskolleg is an academic paradise where one can indulge curiosity in every discipline and find inspiration for ever-more exciting conceptual projects. I found inspiration in discussions with cancer specialists, economists and sociologists studying quantification and biologists far from my field. I also learnt so much about my own work in the process of describing it to non-scientists, an essential part of helping to spread the idea of the value of science in society.

I grew up in a cotton mill town on the edge of the Pennine Mountains near Manchester, England, with only an aptitude for mathematics and a fascination with animals. In my town there was little expectation of going to university. I would greatly love to hop in a time machine and visit my 14-year-old self to inform him in no uncertain terms that two decades hence he would be rubbing shoulders with intellectuals and watching premieres by world-leading musicians in a leafy Berlin suburb. The incredulity of my teenage self would be glorious to see.

I feel I am now in a position and it's my duty to give what advice I can to new Fellows. There are three categories: *Things I did that I recommend*: attend and join in with all the extra social events and seminars; have dinner on the balcony of the Weiße Villa with the evening sunshine sparkling through the grand red tree; experience the cool bars and street performers around the Warschauer Straße S-Bahn; volunteer to give a colloquium and relish the question-and-answer session; take a cooling swim in the Wannsee in summer; go to concerts and gigs all around the city; rejoice in the joy of dogs playing in the Grunewaldsee; go all-night clubbing in Kreuzberg. *Things I didn't do that I probably should've*: go to German classes: you may not become fluent, but you will make lots of friends; play volleyball on the back lawn in the sprinkling blossom on a spring afternoon; check out the view from the American radar tower in the Grunewald; explore the historical buildings in Potsdam. *Things I did do that one shouldn't do*: decide to extend your stay on the day you're supposed to fly home ...

I will always look back on my time at Wiko so fondly as the most outstanding of stepping stones in an academic career. Hopefully, two decades from now I will be imagining hopping in a time machine to visit myself at Wiko, only to be met with incredulity on what my time at Wiko has enabled me to achieve. That magical time I shared with that gathering of specialists-generalists, the Fellows of all trades, masters of some.