

‘A very personal story and a very unusual one. Jordi’s account of his life, from Spain where he was born to the UK where he now lives, is not only a physical journey but a psychological one as well. His feelings and views about the exploitation of animals, particularly those that are raised and killed to be eaten, are powerfully and poignantly described. Those who have already started to tread the vegan path will find it profoundly reassuring. Those with different views will, nonetheless, have their eyes opened to a new way of thinking. After all, there can never be too much compassion and kindness in the world.’

Virginia McKenna OBE,
co-founder of Born Free Foundation

‘An incredibly comprehensive guide to what it means to be an ethical vegan, from its historical origins to the practicalities of everyday modern life. Jordi’s court case means that the beliefs of ethical vegans, quite rightly, have to be respected. A book like this is really helpful for anyone who wants to understand why.’

Kerry McCarthy MP

‘A personal journey and one of the most important stories in veganism today. Jordi Casamitjana’s *Ethical Vegan* dives into the deep past of our relationship with animals, from Buddhist ethics to Taoist wisdom to the latest social and cognitive science. He explores what it means to live ethically alongside non-human beings. I loved this book for its generous telling of his legal battle to win recognition for veganism in the workplace, its wide ranging sources, and the way in which Casamitjana pinpoints what we need to do now to make the world better for animals, including us humans.’

Dr Alex Lockwood,
academic and author

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Sample chapters from
September Publishing

‘With Jordi Casamitjana’s lucid storytelling interspersed with ancient wisdom and empirical evidence, this book can illuminate our understanding of what it means to be vegan in much the way Yuval Noah Harare’s *Sapiens* explained what it is to be a modern human. As informative as it is incisive, as inspiring as it is inviting, this book will become one of the stand-out pieces of literature in the animal liberation movement. A must read whether you are vegan, vegetarian or otherwise!’

Joel ‘Jay Brave’ Bravette,
sustainability champion and trustee of The Vegan Society
and Made In Hackney youth ambassador

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Sample chapters from
September Publishing

JORDI
CASAMITJANA

ETHICAL
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A PERSONAL
and POLITICAL
JOURNEY
to CHANGE
THE
WORLD

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To all the wasps, and their fellow earthlings

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Preface

The guy who did the vegan thing

I like birds. I like all animals, actually.

Other than humans, birds are the most common vertebrates you encounter if you live in a city, like me. Sadly, though, most people ignore them as if they were nobodies. Many don't know the difference between a coot and a moorhen. They are both chubby black waterfowl commonly found in the parks' ponds, but the top of the moorhen's beak is red, and the coot's is white. I used to mix their names up, but their feet help me to remember – moorhens' feet are similar to those of laying hens, while coots' are more webbed and closer to those of ducks.

As a ritual, every time I see any of them, I quietly tell myself their name. I was doing just that, relaxing on a bench by the pond of my local park, when a bearded jogger passed by me. He looked at my black beanie with the word 'vegan' distinctively printed on it, did a double-take, and slowed down. I knew what was going to happen next.

He stopped, hesitated for a couple of seconds, and while approaching me said: 'Are you the guy?' I said nothing at first. 'Are you the guy that did the thing, about the vegan thing?' he said with

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a quiet voice coloured with a touch of embarrassment. Reassuring him, I nodded and smiled, 'Yes, I am the guy.'

How did I end up in this position? How on earth did this middle-aged man end up with his white-bearded face invading most devices and newspapers (for a few days) and become 'that guy'? How on earth did a single email sent to a few charity workers end up making history and changing the lives of hundreds of thousands of people overnight? How on earth did this idea, simultaneously cooked up in the Aegean Sea and the Kingdom of Magadha thousands of years ago, end up being such a fast-growing cultural trend, which in turn may become one of the last hopes of humanity?

I feel I am at the intersection of three different stories which define ethical veganism. Yes, ethical veganism, not just 'veganism'. This recognised philosophical belief is no less important than Christianity, democracy or socialism. Not just a diet; not just an opinion, nor a trend. This compelling force makes me dispose of banknotes, reject fruit-and-nut mixes, walk with my eyes fixed on the floor, talk to strangers mesmerised by the sight of modern servitude, and feed a daring mosquito with my blood. This is a 21st-century revolution which began more than twenty centuries ago.

If you are a human considering becoming an earthling, a meat-eater considering becoming a vegetarian, a plant-eater considering becoming a vegan, or simply want to learn about the foundations of veganism, this book may be for you. This book asks three fundamental questions, explores three universal ideas and tells three intertwined stories. It looks way back into the ancient past, pays close attention to the dynamic present and dreams away into the hopeful future. It will take you on a journey as personal as it is global, as contemporary as it is timeless. And it tells of identity, truth and rightness.

The most revolutionary ideology brought to life.

1.

The Most Powerful Idea Ever Conceived

Who am I?

My first story is about my personal journey of identity, which made me become an ethical vegan, and it begins in a hospital in Barcelona. One of the first things I must have seen when I popped out into this world was the lens of an 8mm cine camera. My father was a cameraman and had his own small film production company, and many experiences from my beginnings were immortalised in celluloid. My parents must have been quite happy to meet me. After my entrance – or exit, I should say – they found out I was male (this was pre-ultrasound), which must have pleased them as it would work well with my older sister. However, either that day or perhaps a couple of days later, they discovered an aspect of me I had no idea I possessed. They discovered my name. They discovered my name was Jordi; that I was Jordi.

But Jordi is not on my birth certificate. When my parents had already met me and knew it was my name, they had to deal with something most Catalan parents had to face in the mid-1960s: the Spanish State ... and at that time this meant the Spaniard Francisco Franco. He was a fascist general – an actual fascist rather than someone who acts fascistically – who won the Spanish Civil War in 1939, and since then had led an authoritarian regime which

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heavily oppressed any other culture not belonging to his pure Catholic-Spanish elite. Therefore, Catalans, Basques and other nations in the Iberian Peninsula administered under Spain were oppressed and persecuted by Franco's minions.

Any symbol of the Catalan culture was made illegal. This included traditional music and costumes, newspapers, radio, accounts of Catalan history in schools, the Catalan language (you were not allowed to use it in public), and also, of course, all Catalan names. My parents would have been arrested if they had written my name on my birth certificate ... and so would the clerks if they had allowed them to do so. They had to write the Spanish version of it instead – which I will not mention here as, for predictable reasons, I passionately hate it.

Franco died of old age in 1975, when I was eleven. I remember fascism well. I remember being yelled at in the street, 'Speak Christian!', for being caught speaking Catalan. I remember the police storming my local church as an informer had told them there was an unlawful gathering inside. I remember attending guitar lessons, learning forbidden Catalan songs, while one of us had to be by the window checking nobody would pass by and hear us. I remember how terrified I was of the police – all Spaniards, all moustached, all aggressive – who we called 'the grey people' on account of their dull uniforms. I remember being the victim of twenty muggings in a single year and not been able to report them because ... well, you know why. Afraid of the outside world and with a perfect bullies' target look – short, glasses, helmet-style haircut and overdressed – I seriously considered what I could do when I grew up that did not require me to go out at all.

I was born Jordi, a boy from a well-defined culture and nation, and my parents expected I would join their ethnic group as 'one of them' ... but the world told me: 'No, you are not Jordi. No, you are not Catalan. No, you don't belong to the people of your family ... of your neighbours, of your friends.' The first crystallisation of

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my identity, my first individual basic right, my first expression of personhood, the first consequence of my thought, was denied to me. The essential question – ‘**who am I?**’ – was challenged from the beginning.

My parents taught me to resist. They found schools for me where teachers dared to teach me in Catalan. They kept a forbidden traditional Catalan hat hidden in a wardrobe that I could clandestinely put on for a few minutes once a year or so. They never allowed anyone to call me other than by my real name. I never let ‘the grey people’ tell me who I was, or who I wasn’t.

Many years later, I did it. In 2019, while already in Britain, I filled in the papers – I got the witnesses, I got the declarant, I got the solicitor – and I officially changed my first name to Jordi by enrolled deed poll. However, that name isn’t on my hat, on my jacket or my T-shirt. Through my life, I had discovered a new identity to add to my first one, one that feels more authentic, more complete. My first story takes you through my journey to that discovery – a soul-changing destination.

What is this?

At the end of 2016, I was living alone in a one-bedroom studio flat in south London, not far from where the silent film actor Charles Chaplin grew up. It was very small and in quite a state of disrepair, but I put up with it for more than ten years because the landlord never increased my rent. It was on the first floor above a convenience store in quite a busy road, but luckily it had double glazing so the noise was tolerable (which helped a bit with the temperature as the electric storage heater wasn’t very good). My living room doubled as a kitchen, and over the years it had accumulated a lot of stuff (books, CDs, old VHS tapes, work files, all sorts of electronic devices and small figurines of animals). All the flats I lived in since I moved to the UK had an air of temporal residence rather than a home. For instance, rather than decorating

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with framed paintings or pictures, I used posters badly stuck with pins or tape (in my living room I had one of a photo of planet Earth, a reproduction of a 17th-century world map, a tree of life diagram with the major biological groups and a poster of Shania Twain singing ‘Man! I Feel Like A Woman’). A kind of man cave, I suppose.

I was in my fifties but I had lived in so many places throughout my life that I think I’d lost my sense of ‘home’, and everywhere I stayed felt like a temporary en-suite room of an imaginary old hotel with an absentee receptionist. I didn’t mind. I was quite happy just to have a place where I could lock the door and let myself loose in the ravines of my imagination, or someone else’s. But somewhere inside me, a voice urging me to ‘settle’ nagged me now and then, and with age it became more difficult to silence, especially because in the last few months my new job forced me to use public transport, which I had been lucky enough to avoid in my three previous positions.

On the 17 December 2016, around the time I was seriously considering whether I should move somewhere ‘nicer’, I received an email titled ‘Important information from your employer about workplace pensions’. I was expecting this, as three months had passed since I was employed by the animal protection charity, and the office manager told me that by this time my work pension would kick in. The email said:

The government has introduced laws aimed at getting more people to save for their retirement. Simply put, employers have to enrol eligible jobholders automatically into a qualifying pension scheme if they’re not already in one ... You don’t need to do anything because you’ll be automatically enrolled into your employer’s pension scheme, which is provided on 01 Dec 2016.

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We all are born in a readymade world. It's all there, well, most of it. People born before us left it there, ready for us – where we can go, what we can wear, what we should eat, what we could do. The possibilities are not endless. They are very limited, and depending on your gender, class, colour or ethnicity, they may be even more limited. But part of the 'introductory package' of this world is the idea that everything is done for us – we shouldn't be worried, everything has been sorted out. Therefore, when you receive an introductory pack of a new pension fund, the temptation is to assume everything is fine, taken care of.

I don't buy it, though. Many of us, vegans with whom I share my philosophical belief, don't buy it. We don't accept what is offered to us at face value, because more often than not it will not be what we can have, what we should have. When someone offers anything to us, we always mentally ask the question 'what is this?' What is it made of? How was it made? Who is going to profit from it? What is the truth behind it? We look, we check, we dig, and we learn such truths, and when I did all that with the new pension fund I had been enrolled into, I found something I did not like, something I could not accept. I discovered it was investing in companies that test on animals and damage the environment; companies I would consider highly 'unethical'. This discovery made at the end of 2016 marks the beginning of my second story, which led to a series of events culminating with a substantial change in the way vegans are treated by the establishment – a paradigm-changing resolution.

What should I do?

Ideas don't come out of the blue – not even the blue comes out of the blue. There is always a natural context behind everything, even behind the apparent colour of the sky. The third strand to this shared journey originated thousands of years ago. It's the story of how the idea of ethical veganism came about. For me, it comes

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from an impulse that is very old, very ancient. It existed long before anybody was capable of having an idea. And that impulse is called biological altruism.

Life on this planet started about four billion years ago, just after the Earth cooled down sufficiently. A few self-replicating molecules became better at it by getting more complex and by using the matter and energy around them more efficiently. Very soon, they began competing with others, as they were all trying to use the same limited resources and those who found a more efficient way to use them multiplied in higher numbers. Every time something changed in the environment, some molecules which may not have been dominant before got a chance to 'win' now, as they were better 'adapted' to the new circumstances. Welcome to biological evolution by natural selection. It all began with some molecules competing with each other in order to replicate more, and it never stopped, leading to all the current biodiversity on our planet.

Looking at it less scientifically, life sprouted with the concept of selfishness – 'Me, me, me' – which translates into: 'I want everything, I want it all.' However, if this has been the basic tune of biological evolution for millions of years, time has had a very interesting effect on the overall final melody. Life has become more and more complex, and the way it expresses the tune has become more elaborate.

Biologists have a term for this called 'levels of organisation'. This means structures in Nature, with things at higher levels being composed of things at the lower level. Typical levels of organisation we find go from the subatomic level to the atomic, molecular, cellular, histological, organismal, populational, ecosystemic, biospheric, planetary, to the galactic level – and we could keep going.

Although the idea of dividing living beings into 'levels' is quite old (Aristotle was talking about it in the 4th century BCE) this

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was often done more for reasons of ‘hierarchy’ (who is supposed to be superior to whom – with humans always crowned at the top) rather than to describe different degrees of complexity. The roots of the contemporary notion of biological levels of organisation are more recent and were formulated by the ‘organicist biologists’ of the early to mid-20th century, such as Joseph Woodger, Ludwig von Bertalanffy or Joseph Needham. They proposed a sort of middle-ground solution to a debate between two opposite approaches in biology that was discussed at the time: the ‘mechanists’, who stated biological phenomena were ‘nothing over and above’ their physicochemical components, and the ‘neovitalists’, who stated biological phenomena must involve non-physical forces or entities (God, Dharma, ‘energy’, etc.). ‘Organicists’ devised quite an elegant truce between them: it is the increase of the level of organisation which creates the illusion there must be something other than molecules interacting, but there isn’t anything else. Those external forces are not real, but the effect of an increasing level of organisation.

In a way, when you observe a higher level, you kind of forget to regard the lower levels and instead begin to see new properties of the system. For example, if you look at the forest, you might cease to look at the trees, which might make you conclude that woods have ‘magical’ properties you had not seen before in trees alone – but they haven’t. It’s an illusion. When you were looking at trees alone, you did not notice how they interacted with each other, with the symbiotic fungus in the ground, with the plants around them and with the rest of wildlife living with them. And with ourselves, we see humanity as a collective group of human organisms that does amazing things, and we forget each that each organism alone also does amazing things ... and we forget each organism is only an array of amazing cells also doing amazing things, and so on. Every time we look at a higher level of organisation in a system, we tend to forget the levels below, and that is when we seek ‘external’

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explanations of how the system works, because it seems easier than looking down a level.

I remember when I first grasped this idea in 1981, five years after Franco had died of natural causes, marking the end of forty years of oppression. I was sitting in a very crowded lecture room in the annexe of the main red building of the Faculty of Biology of the University of Barcelona. Here I was, finally, fulfilling my destiny. I was going to become a zoologist after the degree I had just started. In school, I only had good grades in life sciences (I collected insects, seashells and minerals, you see), and when I heard about the biology degree, I knew it would be for me.

When I was a child a Spanish documentary maker, Dr Felix Rodriguez de la Fuente, was always on TV. He was our equivalent of David Attenborough, and just like Sir David he had such a distinctive way of speaking that he was often the target of keen impersonators. He was particularly partial to wolves, and his documentaries about them fascinated me.

Did you know the concept of ‘alpha male’ was first coined after studying wolves? The term was first used in 1947 by Rudolf Schenkel of the University of Basel, who based his findings on researching the behaviour of captive grey wolves (*Canis lupus*). It means one male is the ‘boss’ of the pack, and not only makes the most important life decisions for the group but also dominates all the other individuals physically and reproductively. This view of grey wolf pack dynamics was popularised in 1970 by David Mech in his book *The Wolf*, which must have influenced Dr de la Fuente, as he started filming his documentaries with wolves a few years later. However, because David Mech’s research was mainly in captive populations with unrelated individuals, he eventually found the concept of an alpha male may have been an erroneous interpretation of incomplete data. He formally disavowed this terminology in 1999. Now we know a pack is usually a family

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consisting of a breeding pair, who are equally dominant, and their offspring of previous years.

The first animals I developed a huge bond with were a kind of modified wolves: dogs. First Nuska, a light brown short-haired nimble mongrel, I don't know which mix of breeds she came from, and Nit, a purebred German shepherd who was the only fully black puppy in the litter ('Nit' is Catalan for 'night'). My first experiences of love and grief came from my relationship with them, especially from their tragic deaths. Nuska died being run over by a car when we were on holiday when I must have been nine or so, and in my late teens I had to put Nit down as she was suffering from a painful disease – it was one of the most dramatic, soul-crushing moments in my life. I consider them my siblings, actually. I was not their father; we all were fathered by my parents. I was not their owner, we all were owned by my parents. We were equals. Brothers and sisters in a common struggle.

I spent a long time with them away from humans, often having naps with them under the table. I got closer to them than to most people I knew, and they trusted me as one of their own. They kept appearing in my dreams many years after their departure, trying to fill the void they left behind. They were both wolves at heart, I could see it. I could see them trapped in the wrong place, as I felt I also was. I could see their identity being messed up by others, as mine also was. They told me how to handle the situation better than any person has ever taught me. They taught me how to handle people. They taught me how to survive.

Although they both revered my father, I now realise that if they saw him as the alpha male, this must have been for the same reason the first studies of wolves arrived at the same erroneous conclusion. We were all captive, in a way. Captive in an urban world with no hills to howl at the moon from. Captive in a genetic and cultural mistake designed by those who do not know reality

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and Nature. We all were living in unnatural settings trying to cope in the best way we could. We all were trapped in this hostile world without an instruction manual. Everyone was telling us who we were supposed to be and what we were supposed to do. We all had our muzzles and leashes to wear, and we all like to run in the fields of freedom.

After watching as a child Dr de la Fuente's documentaries titled *El Hombre y la Tierra* (Man and Earth), showing him in the proximity of wild Iberian wolves, I wanted to become him, but I did not know how. I wanted to do what he did. I wanted to go to the 'wild' and observe animals in Nature, without interfering with their lives. I wanted to learn from them; I wanted to commune with them. This idea was far more appealing to me than any profession that involved being around people – because, in my experience, humans were quite dangerous creatures who seemed to have a problem with my existence. I was sure wolves would not share such an attitude, as Nuska and Nit had told me.

In Catalonia, there was not a separate degree in zoology; instead it was a specialisation of the five-year biology degree (the first three years were the same for everyone, and then you specialised in either fundamental biology, botany or zoology). Within zoology, there was a new discipline which fitted even more what I wanted to be: ethology, the comparative study of animal behaviour in the wild (popularised when three ethologists, Konrad Lorenz, Niko Tinbergen and Karl von Frisch, won the 1973 Nobel Prize). But it hadn't been long since General Franco had died, and the still powerful Catholic Church objected to the teaching of ethology – according to them it profanely placed humans and animals 'at the same low level' – and none of the universities in Catalonia had a degree in it at that time. So I had no other choice but to enrol on my general zoology degree and teach myself ethology with any book I could find. My academic journey was all set up and ready

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to go, and it began in that crowded lecture room in the annexe of the Faculty of Biology at the University of Barcelona.

I had heard of the concept of ‘levels of organisation’ at school, but I had not grasped its true significance before I started my degree and read *The Selfish Gene* by Oxford professor Richard Dawkins (the 1976 bestseller which popularised ideas developed during the 1960s by W.D. Hamilton). This book allowed me to see things from a point of view I had never considered before and helped me to make sense of it all. It is the view of the ‘gene’, the view of the entity at the lowest level of the system, rather than the view of the organism or the group. Lower than organ, lower than tissue and lower than cell – so low most people forget they exist.

One of the most interesting aspects of this view is that what we observe in Nature makes more sense if we see organisms as the way genes reproduce, rather than genes as the way organisms store and pass information to others. Let’s look at fungi, for example. When we see a mushroom in the woods, we tend to think we have seen the ‘organism’ mushroom, but in fact we have only seen the reproductive organ of a much bigger organism which is spreading in the soil all around it, in the form of microscopic filaments called mycelia. We can understand better how fungi work if we see the organism as the mycelia not normally visible to us, which, once a year, reproduces by ‘erecting’ some visible mushrooms.

In Richard Dawkins’ book we have that word again: ‘selfish’. This word has its counterpart, though. From the gene-centred view, the more that individual organisms are genetically related, the more sense it makes for them to behave selflessly with each other, as this will help the genes they all share – what counts is the genes replicating, it doesn’t matter in which organisms they do it. It’s no longer ‘me, me, me’; we now also find ‘we, we, we’.

Here comes the interesting thing about this. A selfish molecule may become a selfish gene, but when a selfish gene starts to

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reproduce in groups of genes within an organism, the selfishness becomes co-operation. To survive, it is in the interest of the selfish gene to help all the genes of the organism where it lives to survive too. If the organism dies and doesn't reproduce, all genes die with it. By moving up the level of organisation from gene to organism, we can now see a new property emerging: 'altruism'.

We use the term altruism in everyday life as 'the disinterested and selfless concern for the well-being of others', but when W.D. Hamilton developed this concept within biology in the 1960s he meant 'the behaviour by an individual which increases the fitness of another individual while decreasing the fitness of the actor'. Altruistic behaviours appear most obviously in kin relationships, such as in parenting, but may also be evident among wider social groups. These behaviours allow individuals to increase the success of their genes (more copies of them surviving and multiplying) by helping relatives who share those genes too. Hamilton created a formula predicting that the more genes are shared between two individuals, the more altruistic behaviour you should see between them. There is abundant evidence that proves this theory, and the most spectacular example of it can be found in the behaviour of social insects, the subject of my PhD studies.

The last two years of my biology degree were on zoology. At that time I had already been learning off-campus about ethology thanks to Dr Enric Alonso de Medina, who was trained by the famous Oxford ethologist Desmond Morris (who specialised in human ethology, and who in 1967 wrote his first bestseller, *The Naked Ape*). Dr Alonso de Medina taught it 'unofficially' in lectures from his home and other venues, which were popular as they had this air of 'forbidden truth'.

That was the early 1980s, and I was still living with my parents in a modest seventh-floor apartment in a Barcelona quarter called El Guinardó – very close to the famous Park Güell where I used to play as a child, unaware that Gaudi's architectural marvel would

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be the obligatory stop of any tourist for years to come. Although I thought my looks were modern enough – round Lennon glasses and small ponytail styling what essentially was a ‘mullet’ – I continued being an introvert more interested in Luke Skywalker’s recent fatherhood news than with partying or dating.

By the fourth year of my studies, I had to start doing proper research. I had to choose a zoological subject and write a dissertation about it. I thought I could do a little bit more than that. I could find some animals ‘in the wild’ and conduct a field study to add to my dissertation. Which interesting animal could I find in the middle of a cosmopolitan city, though? I loved Hamilton’s theories, but also the work of E.O. Wilson, which coined the term ‘sociobiology’ (a field of biology which aims to explain social behaviour in terms of evolution). Wilson, who started his career studying ants, used sociobiology and evolutionary principles to study the behaviour of social insects, and then to understand the social behaviour of other animals, including humans – it was fascinating stuff. Therefore I thought I should also choose a social insect as my first subject of study. I consulted Dr Alonso de Medina and he suggested I could try social wasps, as very few people had studied them (on account of their danger and lack of commercial value), and he had found a small nest of the wasp *Polistes omissus* in a brick structure in the campus. This type of wasp doesn’t build very big nests, and it does not cover them with a paper wall. The nest’s cells are visible from the outside and therefore the wasp’s behaviour can be easily observed. Perfect, I thought.

What happened the first day I approached that nest changed my life. It was located in a big field inside a two-metre-tall rectangular structure which functioned as an air ventilation chimney of an underground parking facility. It was halfway from my faculty to the university canteen, where I often ate as it was cheap – a very convenient location indeed. The structure was not built properly,

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and the bricks had exposed holes perfect for holding nests inside. I took my notebook and approached the chimney with some trepidation. About ten metres from it I could already see some wasps flying in and out of one hole. I slowed down, and stopped. As I could not see anything from there I took a few steps forward. Then I did the same again, creeping closer and closer to the hole. Then I saw her.

I already knew who she was. I had read about *Polistes* before approaching the nest, and I knew that to protect it the colony's workers take turns as guards. They stay by the entrance of the nest and look out for danger. If they perceive any, they open their wings slightly while releasing an alarm pheromone the other wasps can smell. If the danger increases the guards dash out and try to sting the creature threatening the colony, leaving the alarm pheromone in the 'target', and then all the wasps know who to sting. The more they manage to sting the target, the stronger the pheromone 'smell', as it is in all the stings. I knew that if I approached and they stung me I had to run away fast, as they would chase me for some time. When I saw the guard at the entrance (clearly distinctive from the others as she was looking out and checking everyone flying in) I was paralysed by fear.

But how on earth I could become an ethologist if I froze every time I approached a dangerous animal? I had to pull myself together. I had to draw strength from somewhere and overcome the instinct to run away, which had been imprinted in my behavioural repertoire through evolution (the sight of black and yellow in animals, a pattern called 'aposematic', causes an instinctive reaction of 'danger'). I needed to move a bit closer to be able to study the nest, and I moved slowly using my notebook as a shield to protect the bottom half of my face. That is when she saw me.

The guard moved abruptly and faced me right on. The front of the *Polistes* head is quite flat, and when seen from the front the two big kidney-shaped compound eyes look like two elongated

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‘alien-style’ eyes – quite scary if you have never seen them before. In other words, as opposed to ants and bees, these wasps seem to have a distinctive face. The guard turned her head and squared her face with mine. My heart was pumping fast and adrenaline circulated in my bloodstream. My pupils contracted and became fixated on her face. She vigorously moved her antenna trying to smell me, looking at me from head to toe. Her wings gradually opened. They opened twenty degrees or so ... and then she closed them, her body relaxed, and she resumed her task of checking traffic as if I was no longer there.

This one-inch individual had seen me, she knew I was a dangerous human as she had encountered them before, but she judged me, and judged me correctly. She assessed my behaviour and concluded I was not dangerous ... because it was true, I wasn't dangerous. I had no intention to harm her or her family, and she could read all that in me. She could read me better than I could read her. She treated me better than other humans had treated me.

My heart kept pumping for quite some time, but not because of the feeling of imminent danger any longer, but because I witnessed an interspecific interaction that taught me something very profound. These tiny creatures everybody hates, everybody kills at the first opportunity, were not that different to us. In fact, they seemed even cleverer than us. Most people look upon themselves as superior beings, and look at the rest of animals as commodities they can exploit or destroy at will. My urge to become an animal protectionist was sparked that day. I concluded that there was something fundamentally wrong in the way we treat other animals, and that animals needed to be protected from humans. And the ecological behaviour of wasp of the genus *Polistes* became the subject of my PhD studies, which for ten years justified my new nickname: ‘the wasp man’.

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ETHICAL VEGAN

According to Hamilton, it is not surprising *Polistes* live in colonies and protect all their members even at the risk of their own life. This is because they are ‘haplodiploids’, like ants and bees.

There are three ways in which genetic material is passed to the next generation. ‘Aploids’ share all the genes, which is not always useful, as mixing genes from parents would give you more diversity and make you fitter to survive. All vertebrates are ‘diploids’, who share half of their genes. This is by far the most common type, where offspring have half of their genes from their father and a half from their mother. Finally there are ‘haplodiploids’, where most offspring share 75 per cent of the genes – this type is not common, but includes Hymenoptera, an order of insects composed of ants, bees and wasps.

In haplodiploid animals, a female produces daughters by mixing her genes (from her eggs) with the genes of the father (from the sperm). After mating, she keeps it in a reservoir of sperm and releases it gradually to fertilise the eggs, but when she runs out she can produce full individuals from her eggs alone, and these individuals will be male. So females have 50 per cent of genes from each parent, but males only have genes from the mother. Also, if an insect colony has only one queen, and she has only mated once (the standard), then the relatedness between all female workers in a nest is 75 per cent.

Therefore, according to Hamilton’s rule, in haplodiploid animals you should find societies in which individuals are more altruistic with each other to the point of often risking their lives to save any of their siblings, as most of the members of these societies would be ‘sisters’ who share more genes than sisters in other species.

This is precisely what we find. The most sophisticated social species on the planet with the highest level of altruistic behaviour are found in ants, bees and wasps, which are all haplodiploid. The colonies of these insects are mostly composed of females.

THE MOST POWERFUL IDEA EVER CONCEIVED

Here comes a fascinating thought, though. Why did the guard of the nest I studied not raise the alarm, if her interest was protecting all her sisters? Why did she not do it when anybody approached, no matter who they were? Why did she have to 'judge' each situation and decide when to do it? It's because raising the alarm is also costly for her sisters. Some wasps might die by coming out and trying to sting me. It's important to be measured and judge well.

Helping each other even if you aren't even the same species can have an evolutionary benefit. 'Mutualism' is when different species help each other regularly. A classic example can be found in the Ocellaris clownfish who dwells among the tentacles of Ritteri sea anemones. The anemone eats from the leftovers of the fish's meals, and in turn the stinging tentacles protect the clownfish from its predators.

Genes may be selfish but they co-operate when it benefits them in the long term. Selfish genes working together within social species tend to create altruistic behaviour with the members of their society as this is ultimately good for them. However, individuals in these societies may sometimes also behave altruistically to individuals of other societies, even if they belong to another species, because some of their genes may still be in these other species, and the risk of paying a negative price for being hostile may be too high.

It may be beneficial for the individual to help others in need even if this is at some cost to themselves, as the favour may be returned in the future. This is known in evolutionary biology as 'reciprocal altruism', a concept first developed by the sociobiologist Robert Trivers in the 1970s. An example of this is the warning call many species of birds or mammals produce when they detect a predator, which exposes them, increasing their chances of being targeted by the hunter, but may help others to escape, including other species too.

Another example is the vampire bat. When they return to their sheltering caves after a feeding expedition, where they sucked

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the blood of other mammals (hence their name), they sacrifice their own food by regurgitating some of the blood they found and giving it to their 'friends'. As this difficult-to-find food is the only thing they can eat, without this sharing many would become undernourished. There is also the red-winged blackbird (*Agelaius phoeniceus*) found in North and Central America. The males help to defend the neighbours' nests, even if this leaves their own nest temporarily exposed. Memory is helpful to survive. It allows you to remember generosity and kindness, and to 'pay it back'.

Many years after the publication of *The Selfish Gene*, Richard Dawkins said he could see the title might have given an inadequate impression of its contents, and in retrospect he thought it would be better titled *The Immortal Gene*. I think he is right. The genes alone may behave selfishly, but when you look at the higher level of organisation where these genes reside, at the individual, societal and population level, we see the selfishness diluted, and altruism and respect now appear as evolutionary positive attributes. Because many of the genes are shared by many species, and they don't die but they get together with other genes and keep replicating in different organisms and species, immortality is what characterises them, not selfishness.

Think about it. The first-ever gene managing to replicate successfully in the first living cell may still be in all of us, in all living beings on this planet. In all animals, in all plants, in all fungi, in all bacteria. This gene, and all its primordial 'friends', has been replicating and multiplying for billions of years. While organisms die and species evolve, these genes have always been here. They are the common denominator of any earthling.

Somewhere sometime, early humans who might have had profound encounters with an altruistic animal as I had with the wasp probably had similar revelations and must have articulated their experiences to others and expressed them with a simple new

THE MOST POWERFUL IDEA EVER CONCEIVED

idea. Perhaps this idea was later passed from person to person, from generation to generation. Perhaps at one point it became part of a belief, creed or dogma. Perhaps it was discussed in different parts of the world and then spread to new lands and minds. What happened to this idea over thousands of years is the third story I tell in this book.

Three stories, three questions, three ideas. First we ask, ‘Who am I?’ and the answer ‘I am me’ deepens as we grow in a quest for true identity which never ends. Second, ‘What is this?’ The first consequence of sentience is to ‘seek the truth of the world around us’. This questioning urge, this need for truth colours every act and can take us to extraordinary places – for me a single email seeking the truth about a pension policy grew into a ground-breaking court case which revealed to the world a reality most people knew very little about.

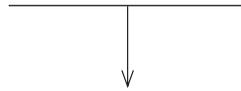
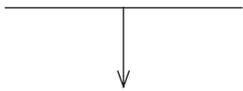
The third idea is the most important because it is no longer about me, but about us, about everyone, about everything. The answer to the question ‘**What should I do?**’ This idea is strong because it is both positive and negative. This idea is useful because it’s universal. This idea is powerful because it is simple.

This idea is: ‘**Do no harm**’.

DO NO HARM

LEVELS OF
ORGANISATION

RELATIONSHIP
STRATEGIES



Altruistic

Increasing the fitness of another while decreasing the fitness of the actor

Selfish

Be the fittest and replicating more at the expenses of others

Galaxies

Planet-systems

Biospheres

Ecosystems

Populations

Organisms

Organs

Cells

Genes

Molecules

Atoms

BIOLOGICAL