

## Make Peter Kropotkin the Poster Boy for EvoS

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First, a disclaimer. I had the privilege of having David Sloan Wilson as my Ph.D. mentor (1988-1991), so I can hardly claim to be neutral on anything dealing with EvoS. True, there was no EvoS when I studied under David, but the idea was clearly gestating under various different guises in his brain. It would creep out now and again, and sometimes it seemed that David had to fight it back because there were so many other things he was working on at the same time.

Of all the EvoS-to-be-related things that David taught me—and that list is a long one—perhaps the one I cherish most is that everything can be studied from an evolutionary perspective. Everything. The trick is to be unremittingly curious, intellectually brave, know everything about the subject, and then figure out how to ask the question in the proper way.

David is the heart and soul of EvoS. But, everyone who knows EvoS knows that. Here, I am going to make a pitch that EvoS should adopt a less known, but equally brilliant, person as their poster boy. That person is Russian evolutionary biologist, geologist and anarchist agitator, Prince Peter Kropotkin.

Kropotkin's life was the stuff of movies, but space doesn't allow too much on that front here (Dugatkin, 2011; Kropotkin, 1899b; Miller, 1976; Woodcock & Avakumovic, 1950). Born in The Old Equerries Quarter of Moscow on December 21, 1842, into a family of demi-nobles, Kropotkin renounced his title as Prince, and as a teenager became fascinated by the political theory of anarchy. The Czar, however, was not so enamored with anarchist ideas. What makes that rather obvious statement relevant is that teenager Peter Kropotkin happened to be the Chief Page to Czar Alexander II when his burgeoning interest in anarchist ideas became something of an obsession, albeit one that he kept secret from his boss. At the very same time, Kropotkin's brother, Sasha, began telling young Peter about a new idea floating around intellectual circles in Moscow—a theory of change that a Brit named Charles Robert Darwin wrote about in 1859. Peter quickly had two passions – anarchist philosophy and evolutionary biology.

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When he finished his stint as Page to Czar Alexander II, Peter set off on a five-year natural history expedition in the Amur region of Siberia. In what amounted to a colder and more challenging Russian version of *The Voyage of the Beagle*, Kropotkin became immersed in the study of evolutionary biology. He went to Siberia a staunch Darwinist and left there the same way. But when he left he was a new kind of Darwinist. One who would argue that competition was not the only possible outcome of the process of natural selection. Instead, Kropotkin, following in the footsteps of other Russian School evolutionists (such as Karl Fedorovich Kessler) argued that natural selection could, and often did, favor what he called “mutual aid” (Todes, 1989)—what today we would call altruism and cooperation.

During his five years in Siberia, Kropotkin criss-crossed that vast area many times—a rough estimate would log him at about 50,000 miles total— often on dog-sled, and far too often when the temperature was brutally cold. “Lying full length in the sled...wrapped in fur blankets, fur inside and fur outside,” Kropotkin noted in his journal, “... temperature is forty or sixty degrees below zero, Fahrenheit” (1899b, p. 198). Over and over again, wherever he went, what he saw, or at the very least, what he thought he saw, were organisms displaying mutual aid.

Animals formed tightly knit groups, huddling for warmth. They gathered food and shared it, and they took turns on sentinel duty, guarding others from danger. “Wherever I saw animal life in abundance,” he wrote “... on the lakes where scores of species and millions of individuals came together to rear their progeny; in the colonies of rodents; in the migrations of birds which took place at that time on a truly American scale along the Usuri; and especially in a migration of fallow-deer which I witnessed on the Amúr, and during which scores of thousands of these intelligent animals came together from an immense territory...in all these scenes of animal life which passed before my eyes, I saw mutual aid and mutual support carried on” (Kropotkin, 1902, p. xxxiv-xxxv).

And it wasn't only in nonhumans that Kropotkin observed mutual aid. The constructive work of the unknown masses,” Kropotkin noted, “which so seldom finds any mention in books...the importance of that constructive work in the growth of forms of society, fully appeared before my eyes...to see the immense advantages which {these communities} got from their semi-communistic brotherly organization, and to realize what a wonderful success their colonization was, amidst all the failures of state colonization, was learning something which cannot be learned from books” (Kropotkin, 1899b, p. 216).

Kropotkin was clearly obsessed with mutual aid. I know the feeling. And Kropotkin was a brilliant and fascinating character who was instrumental, if overlooked, in the early history of evolutionary biology. But, history is full of such characters. Why make Kropotkin the poster boy for EvoS? I'll devote the remainder of this essay to answering that question, but I'll do so with the caveat that I am only touching here on the tip of the iceberg.

## **KROPOTKIN WAS THE QUINTESSENTIAL INTERDISCIPLINARY THINKER**

As is the case for work in EvoS today, Kropotkin's interdisciplinary approach was rooted in concept: the concept that evolutionary forces explain the diversity of form and function we see around us in everything from microbes to humans.

Kropotkin's mastery of what at first appear to be disparate subjects, but form an integrated whole when viewed through the lens of evolutionary change, was nothing short of mindboggling. He wrote books (or long pamphlets that amounted to books), and was widely considered one of the leading experts on such varied topics as: evolution and behavior, ethics, the geography of Asia, anarchism, socialism and communism, penal systems, the coming industrial revolution in the East, the French Revolution, and the state of Russian literature (Kropotkin, 1898, 1899a, 1903, 1905, 1908, 1909, 1924).

All of these publications, either directly or indirectly, relied on Kropotkin's evolutionarily-derived ideas on mutual aid. In his writings on geography, for example, Peter told his reader that in a world of droughts, freezing temperatures, hurricanes and volcanic eruptions, mutual aid was a must for survival. Geography, he wrote, "teaches us, from our earliest childhood, that we are all brethren, whatever our nationality...that whatever the wars they have fought, mere short-sighted egotism was at the bottom of them all." (Kropotkin, 1885, p. 942). In his book *In Russian and French Prisons*, he used mutual aid theory to defend his claims that prisons were ineffective and eventually would be seen as barbaric relics of the past. Then in his essay *Prisons and their Moral Influences on Prisoners*, he noted, "Antisocial acts, need not be feared in a society of equals...all of whom have acquired a healthy education and the habit of mutually aiding one another."

So enamored was Kropotkin with mutual aid's seemingly unlimited reach, that he eventually spoke of the *scientific* law of mutual aid, which guided the evolution of *all* life on earth. Mutual aid was, he said "of the greatest importance for the maintenance of life, the preservation of each species, and its further evolution" (Kropotkin, 1902, p. xxxv).

### **KROPOTKIN COULD LOOK FOR ONE THING, BUT FIND ANOTHER**

EvoS touches on many broad, conceptually deep topics, and does so in new ways. As with all science, but especially with cutting-edge science like EvoS, initial hypotheses have to be rejected and new ones developed and defined. Kropotkin did so on a regular basis, but never more dramatically than when he first started to study social behavior in the frozen Tundra of Siberia. "I failed to find, although I was eagerly looking for it," Kropotkin noted, "that bitter struggle for the means of existence, among animals belonging to the same species, which was considered by most Darwinists (though not always by Darwin himself) as the dominant characteristic of the struggle for life, and the main factor of evolution." Kropotkin was stunned. Instead, it was "the struggle for existence which most species of animals have to carry on [is] against an inclement Nature" (Kropotkin, 1902). That struggle led directly to mutual aid *among* individuals.

By positing that mutual aid, not competition, was the primary outcome of natural selection, Kropotkin was bucking the strongly held, primarily British, view of the day that competition was the sine qua non when discussing the process of natural selection. From that point on, Kropotkin was always suspect of ideas that reeked of what he perceived as dogma. That skepticism, however, was not without its costs, as much later in his life, Kropotkin rejected Weisman's experiments on the inheritance of acquired traits (he thought these experiments were accepted

dogmatically by British scientists), and clung to Lamarckian inheritance, leading him down a torturous path of misguided predictions. As a case in point: Kropotkin argued that mutual aid evolved much more quickly than might be expected if natural selection was the only driver of the process. But, Lamarckian inheritance provided Kropotkin an evolutionary theory that fit his observations on how quickly he thought mutual aid developed in humans and animals. He was wrong. At least with respect to animals.

### **KROPOTKIN EMBRACED THE IDEA OF APPLYING THE SAME CONCEPTUAL (EVOLUTIONARY) FRAMEWORK TO BOTH HUMANS AND NONHUMANS**

Nothing, I would argue, could be more Darwinian and EvoSian than same conceptual, evolutionary framework to both humans and nonhumans. The easiest way to convey this aspect of Kropotkin's thinking is to list the titles of the chapters in his book *Mutual Aid*: "Mutual Aid in Animals," "Mutual Aid among Savages," "Mutual Aid among Barbarians," "Mutual Aid in the Medieval City," and "Mutual Aid among Ourselves." But the continuity between humans and other organisms ran deeper than just animals: "We must be prepared to learn some day," Kropotkin wrote, "from the students of microscopical [sic] pond-life, facts of unconscious mutual support, even from the life of micro-organisms" (Kropotkin, 1902). It would be fascinating to know what Kropotkin would have thought of all the recent work done on microbial altruism (Cordero et al., 2012; Li & Purugganan, 2011; Raymond, West, Griffin, & Bonsall, 2012; West, Griffin, Gardner, & Diggle, 2006).

### **KROPOTKIN UNDERSTOOD THE IMPORTANCE OF OUTREACH**

Outreach, be it to the undergraduate population, or to the general population at large, plays a role in all EvoS programs. Lip service is not sufficient: a concerted effort to bring ideas to people, and in turn, suggest how those ideas can be put into practice, is fundamental to EvoS. Here again, EvoS could hardly find a better poster boy than Kropotkin. He would talk to *anyone, anywhere* about his ideas on both science and politics. When Kropotkin was young, such conversations tended to take place in coffee shops and the like, but when his ideas on mutual aid (and anarchist politics) made him one of the most well-known intellectuals of his day, the audiences grew, as when Kropotkin went on speaking tours of the United States in 1897 and again in 1901.

Kropotkin gave outreach talks at an astonishing number of places during these tours of the United States. He spoke about his Siberian expedition at the National Geographic Society in Washington, he lectured to thousands at Chickering Hall in New York City and the Odd Fellows Temple in Philadelphia. He dazzled audiences with a series of lectures on mutual aid at the Lowell Institute in Boston. In Chicago, while a guest at Jane Addams' famous Hull House, he poked fun at the "the porkocracy of Chicago," and then settled down and gave a series of talks on mutual aid at The Twentieth Century Club.

If Kropotkin had his way, everyone would come to understand the importance of mutual aid, and he would use every means possible to see to that, be it through pen or podium.

As you might have gathered, I'm an unabashed admirer of both EvoS and Peter Kropotkin, and I savor the opportunity to tie two of my passions together. If EvoS does ever hold a competition for poster boy/poster girl, I implore you, ladies and gentleman, vote Kropotkin.

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