



A community garden in New York City. Egalitarian, self-policing social groups promote selfless behaviour.

MULTILEVEL SELECTION

How evolution guides policy

Monique Borgerhoff Mulder enjoys a study on Darwinian approaches to social issues.

In *This View of Life*, evolutionary biologist David Sloan Wilson seeks to update a twentieth-century classic for readers seeking solutions to twenty-first-century challenges. The visionary palaeontologist-theologian Pierre Teilhard de Chardin's *The Phenomenon of Man* (1955) envisioned human societies as 'superorganisms' with a collective identity verging on unified consciousness. Wilson aims to replace the spiritual core of this view with evolutionary theory — specifically, multilevel selection, the idea that natural selection can work on group-level as well as individual-level traits.

Wilson's passion for multilevel selectionist thinking, and his relentless optimism, give the book something of a messianic flavour: in places, I detect leaps of faith, for example in the belief that well-functioning groups can solve our problems of collective action. There is no false advertising, however. The very title (albeit cribbed from the end of Charles Darwin's 1859 *On the Origin of Species*) portends a personal perspective. The result is utterly fascinating and beautifully written.

He addresses deep questions about humanity: how we can avoid physical or mental illnesses, raise children, make

groups more effective, create sustainable economies and nurture better planetary stewards. This big-picture thinking about the human condition sits on a continuum between biologist E. O. Wilson's 1998 *Consilience*, a lofty yet incisive musing on how evolutionary theory can unite knowledge across the arts, humanities and sciences, and *Applied Evolutionary Anthropology*, a 2014 book edited by Mhairi Gibson and David Lawson that takes a more pragmatic look at how specific evolutionary models offer solutions to human problems.

The principal thesis of *This View of Life* is that policy is a branch of biology, a claim

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that may sound jarring, radical, hegemonic or even dangerous. But Wilson shows convincingly that it is none of these. Policy is devised to constrain and incentivize behaviour. And ethology has been recognized as a branch of biology since the 1973 Nobel Prize in Physiology or Medicine went to Nikolaas Tinbergen, Konrad Lorenz and Karl von Frisch for their evolutionary analyses of behaviour.

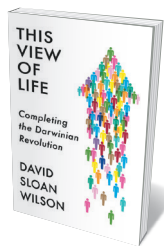
Wilson makes his case with fascinating examples from biology, anthropology and business. These include the importance of prioritizing play over academic work at preschool, and of educating the public on the difference between 'good' and 'bad' germs with respect to inoculating children against "diseases of civilization" (such as asthma or diabetes). Here, we have straightforward cases of good policy based on good science. The highly scripted interaction between an organism's development and its environment has been shaped over evolutionary time; we mess with it at our peril.

THE SOURCE OF GOODNESS

Things get more interesting for policy when Wilson turns to what he calls the "problem of goodness." Literature on the evolution of cooperation — such as the 2011 *A Cooperative Species* by Samuel Bowles and Herbert Gintis — gives us plausible scientific reasons for goodness triumphing over evil, or selflessness over selfishness. Multilevel selection is important here. Wilson's favourite example is an experiment showing how to increase caged hens' egg production. You select not for the most fertile hens in each generation (co-housed, they will peck each other to death), but for the multi-hen cages with the highest productivity (where more positive social interactions predominate).

Humans don't live in cages, but group living is a fundamental adaptation of our species. In a wink of geological time, humanity moved from small pre-Neolithic tribal groups to large nation-states, with transnational religious identities and (albeit weak) global governance institutions.

All this reasonably suggests a role for multilevel selection. We know that social groups work effectively when they have clearly delineated membership, are relatively egalitarian and police themselves. Wilson recounts the huge success of a "school within a school" programme with these features for students



This View of Life: Completing the Darwinian Revolution
DAVID SLOAN WILSON
Pantheon (2019)



Reforming neighbourhoods, for example by clearing up graffiti, can influence individuals' behaviour.

in Binghamton, New York, who were at risk of dropping out of high school. He also discusses the effectiveness of local "block clubs" in run-down parts of Buffalo, New York, and other often well-controlled studies demonstrating the success of groups that follow these design principles in producing socially preferable outcomes.

Such group-level traits are likely to be particularly important in humans, for whom traditions, norms and institutions are transmitted across generations through cultural evolution. Because adaptations occur

"Group living is a fundamental adaptation of our species."

mainly at the level at which selection is most potent, policy interventions should be designed at that level. For humans, this indicates a need to reform the structure of communities, neighbourhoods and workplaces, rather than working on individuals. For example, Japanese carmaker Toyota's enormous success is often attributed to the design of its production line. Toyota's production responds to failures in the same way that an organism responds to pain or a social insect colony to threat, by encouraging real-time reporting of problems on the factory floor and ensuring no punitive action against the employees involved.

SINGLE-MINDED VIEW

There are unsettling aspects to the book. First, if theory determines how we see the world, what might Wilson's prized evolutionary lens be hiding from our view? What dangers are inherent in a

single-minded adherence to a particular theoretical stance? And why is there no integration with other innovative ideas, such as 'behavioural nudges' or 'luxury taxes'? Second, he does not deploy the full toolkit of cultural evolutionary theory. We know, for example, that processes such as imitation, time preferences and drift can spread good and bad practices, mediate the inherent attractiveness of cultural variants, and bias transmission and innovation. Third, if cultural evolution works as Wilson claims, and group-level adaptations are so effective, why are we so poor at reaching solutions that benefit the common good? Selfish motivations are very hard to expunge.

Wilson recognizes the constant tension between different levels of selection. But to the extent that he views human groups as superorganisms, his strictly scientific logic is in places smothered by his faith in multilevel selection. Evidence that multilevel selection operates as the invisible hand causing local actions to benefit the common good is still mixed.

This View of Life should, nevertheless, be on everyone's bedside table — company heads and policymakers included. I'll be leaving a copy in the rented cottage outside Bristol where I am staying, confident that it will change future guests' own view of life. ■

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