

# Cause, Consequence, and Natural Selection: A New Vision of Darwin's Psychological Work

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# Cause, Consequence, and Natural Selection: A New Vision of Darwin's Psychological Work

The theory of evolution by natural selection stands at the heart of modern biology. But what exactly is the causal status of natural selection in evolution? Dr Benjamin Bradley from Charles Sturt University in Australia is challenging long-held assumptions, arguing that Darwin himself saw natural selection as a consequence of other processes, not a cause of evolution in its own right. This crucial distinction opens up new perspectives on how evolution relates to psychology and behaviour.

## Competing Visions of Natural Selection

For 80 years, the 'modern synthesis' of 'neo-Darwinism' has dominated evolutionary thinking. This gene-focused perspective casts random genetic mutations as the raw material upon which natural selection blindly acts, preserving the fittest variations. Natural selection is seen as the causal mechanism driving evolutionary change.

But this view has increasingly been questioned. Developmental biologists emphasise how phenotypic plasticity drives adaptation. Organisms are not objects sculpted by selection but active agents whose behaviours shape evolutionary trajectories. These debates expose a rift: is natural selection the cause of evolution, as the modern synthesis holds, or an effect of other processes – as a new 'developmental' paradigm contends?

Crucially, both camps claim direct descent from Charles Darwin's masterwork *On the Origin of Species*. But which version of Darwinism captures what Darwin actually said? To answer this question, Dr Bradley went back to the source, analysing how Darwin himself wrote about causation and natural selection.

## Darwin's Focus on Observational Evidence

Despite modern scholars' philosophical wrangling over what Darwin intended *Origin* to prove regarding natural selection's causal status, clues emerge from examining his own use and understanding of the concept of *vera causa* or 'true cause'. For Darwin, establishing something as a *vera causa* required observational proof of its competence to produce an effect. But natural selection itself could never be directly observed – its operation was too slow, spanning countless generations. What could be observed were the processes of inheritance, variation, and the struggle for life.

Dr Bradley shows how *Origin's* opening chapters copiously detail empirical evidence for laws of inheritance, organic variability, and

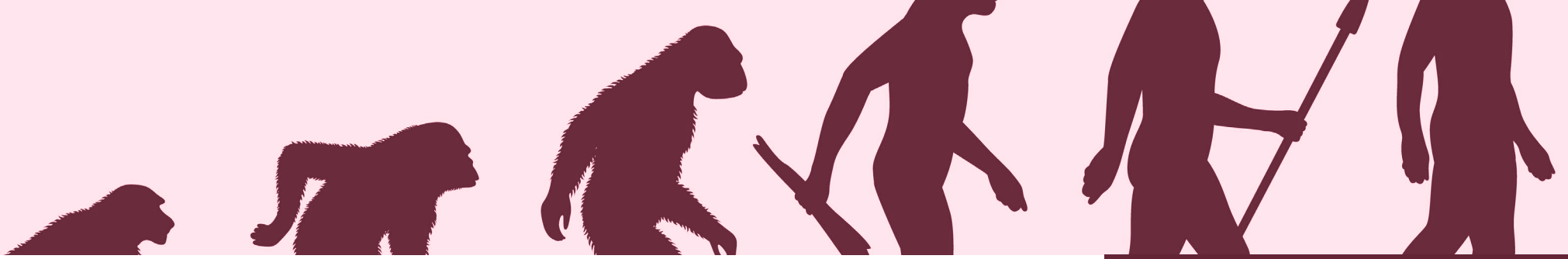
the Malthusian 'struggle for existence', which, over time, led to differential survival and reproduction. The determination by these observable processes of their inferred result, natural selection, is reiterated throughout the book. For Darwin, natural selection's existence could only be deduced indirectly from observing these other processes – making it an 'effect' emerging from a complex web of causal relations, not a discrete cause itself. When critics attacked him for not proving natural selection a *vera causa*, Darwin politely resisted, stressing its power to connect disparate sets of biological facts rather than awarding it a causal role.

## Natural Selection as Higher-Order Effect

Dr Bradley's analysis leads to a transformative conclusion: *Origin* frames natural selection not as a cause of evolution but, as Darwin put it, 'a consequence' of 'the struggle for life' – a higher-order effect of the complex interplay between inheritance, variation, competition and the agency of organisms themselves. This reading, though unconventional, makes sense of previously puzzling aspects of *Origin* – like the book's structure and Darwin's responses to critics. Most importantly, it offers a new lens on the psychological implications of evolutionary theory.

## Recentring Organisms and Agency

If natural selection is an effect of the 'normal activities of organisms', as this reassessment of Darwin suggests, then behaviour and agency take centre stage as drivers of evolutionary change. This inverts the usual assumption that psychology and behaviour are downstream 'products' of natural selection. Instead, a 'phenotype-first' view emerges, where organisms' active responses to existential challenges – their habits, choices and problem-solving – produce the feedback which itself shapes selection pressures. Darwin's concept of 'transitional habits' anticipated this link between plasticity and selection. 'Transitional habits' re-emerged in the 1950s dubbed the 'Baldwin effect', an evolutionary mechanism highlighted



by American psychologist James Mark Baldwin in 1896 to explain how learned behaviours can create inherited traits when passed down through future generations.

Dr Bradley sees this shift as especially relevant for evolutionary psychology. Rather than starting from adaptive problems and inferring the 'mental modules' that natural selection 'must' have built to solve them, an 'effect-not-cause' view invites us to study how flexible behaviour itself leads to inherited adaptations in body and mind. This 'active Darwinism' resonates with work on niche construction, extended inheritance and developmental plasticity. Together, they paint evolution as an endless dialogue between agentive organisms and the selective environments they co-create – not a one-way imposition of 'selection pressures' – particularly in what Darwin called 'social animals,' of which humans were his prime example.

## Revisiting Darwin's Psychology

Importantly, Dr Bradley contends, this agent-centric vision was there in Darwin's original works all along. In books on human evolution, sexuality and the emotions, Darwin foregrounded behaviour's proactive role in biasing selection, driving divergence and sparking evolutionary novelties. However, these psychological insights are dumped as 'non-Darwinian' by the modern synthesis, along with his Victorian values.

Dr Bradley's reframing of natural selection allows agency and plasticity to be recognised as core to Darwin's system. For example, take Darwin's view that human evolution was shaped by group-level processes like social learning and the capacity for self-domestication via cultural norms. This 'multi-level' perspective jars with gene-selectionism but fits elegantly with an 'effect-not-cause' view of natural selection, where plasticity and sociality create conditions under which some lucky if random genetic changes will be favoured over others.

Another example is sexual selection – Darwin's second great 'law' alongside natural selection. The active tactics of mate choice and sexual display constantly alter the landscape for reproductive competition and success. The selection of sexual ornamentation and display is driven by psychologies of preference, invention and desire. In Dr Bradley's re-examination of Darwin's work, these ideas come into focus as exemplary case studies in 'downward causation' from mind to evolution.

## Towards a New Synthesis

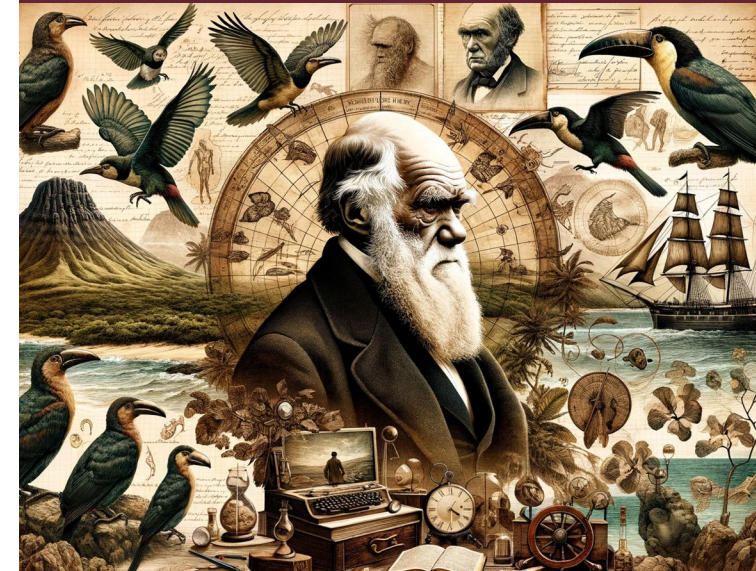
None of this demands rejecting natural selection but rethinking it – not as an external force but as the pattern that emerges from the buzzing, blooming drama of organisms' life activities. Dr Bradley calls this ceaseless interplay between organisms and their worlds the 'theatre of agency'.

The implications are profound – not just for evolutionary theory but for how we see our own species. We are simultaneously products and producers of evolution – shaped by the sieve of past selection but also actively shaping what the future's sieve will sift. Every behavioural novelty, from tool-making to technology, alters the pressures which lead to selection. Our 'struggle for existence' is as much shared creative endeavour as a 'war of all against all'.

This new Darwinism points towards a unified science of behaviour, evolution and heredity, where psychologists are key players, not supplicants. Dr Bradley's provocative re-examination of Darwin's original vision opens vistas for a true evolutionary psychology – one that escapes the cramped confines of genetic determinism, exploring instead how agency and evolution interweave on the ever-shifting stage of life.



Dr Bradley's analysis leads to a transformative conclusion: *Origin* frames natural selection not as a cause of evolution but, as Darwin put it, 'a consequence' of 'the struggle for life'.





## MEET THE RESEARCHER

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Dr Benjamin Bradley obtained his MA in Human Sciences from St. Catherine's College, Oxford University, and his PhD in Psychology from Edinburgh University. He has held academic positions teaching psychology in the UK and Australia. From 1998 to 2017, he was Foundation Professor of Psychology at Charles Sturt University, and Professor Emeritus thereafter. Dr Bradley has published extensively on child development, the psychology of experience and the history of biology, including the influential books *Visions of Infancy, Psychology and Experience* and *Darwin's Psychology*. His research yields pivotal insights into the social capacities of human infants. Highlights include proving that babies as young as six months can enjoy participating in all-infant groups – as predicted in Darwin's psychological theory. His film *Darwin's Babies* premiered at the 2009 Cambridge Darwin Festival.

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<https://babiesingroups.com/babies-in-groups-the-book/>



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### FURTHER READING

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