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Alfred Russel Wallace Notes 16: The Flexible Wallace.

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Summary: Alfred Russel Wallace (1823–1913), though a naturalist of considerable renown, has sometimes been accused of inflexibility and inconsistency in his thinking. Many of his critics, however, ignore his basic approach to knowledge accumulation, which was explicitly incremental, based on a perceived need for constant reconsideration. Here, I: (1) identify five groups of Wallace critics who seem to be operating with prior agendas, and (2) provide lists of subjects on which he either changed his mind, or remained constant, according to individual situation. *Key words:* Alfred Russel Wallace, inconsistency, knowledge accumulation, flexible thinking

Introduction

Alfred Russel Wallace (1823–1913) is well known to historians of science as a co-introducer of the theory of evolution by natural selection, a pivotal figure in the development of the field of biogeography, a significant contributor to theory in several other natural science studies, and a clever critic of many of the social institutions of his time. Sometimes, however, these broad interests have led to his being portrayed as something of a dilettante, an overly impressionable thinker perhaps limited by irrational preconceptions. Even so acute a thinker as Charles Peirce once described him as believing “in all that he believes down to the very soles of his boots” (Peirce 1906, p. 160), an assessment some might take as an accusation of inflexibility.

Wallace’s reputation has also suffered as a result of his interest in a variety of what have been branded ‘fringe’ explorations, most notably on paranormal subjects, anti-vaccinationism, land nationalization, and socialism. These negative impressions have led, both in his own time and more recently, to accusations of inconsistency. But hardly anyone has actually read enough of his diverse oeuvre to be a legitimate judge of the level of internal consistency of his thought; that is, whether it holds together on scrutiny.

In this communication I take up two subjects. The first concerns the several groups of people who, though often nominally friends of Wallace’s memory, are in my opinion doing damage to the goal of reaching an accurate overall appreciation of his contribution. This effort will not involve pointing fingers at individually named persons – there is no need – but, nevertheless, at some stage one feels an urge to take stock.

Second, I would like to describe Wallace’s general approach to knowledge accumulation, a central component of which involves the willingness to be flexible; I then provide a sample of the many times he modified his opinion as he encountered new, mind-changing, kinds of information.

Understand that my goal here is not hero worship. Generally speaking, I do admire what I know of Wallace and his goals, but I regard him more as a talented questioner than

I do a question-resolver. When ill-imagined attempts are made to diminish Wallace, the inevitable effect is to suppress interest in him, and those questions. I believe that even today we can learn from his thoughts, which often contain a current relevance extending beyond their simple recognition as part of the historical record.

Wallace's (Sometimes Inadvertent) Detractors

The following categories of “detractors” are not meant to include parties – from either his own time or the present – who simply have disagreed with him on particular issues or the interpretation of specific facts. Any professional and/or public figure can expect to have people who disagree with them on any number of individual issues: oftentimes facts may support multiple interpretations. Instead, the persons I allude to seem to be operating on the basis of prior agendas: that is, they have identified some element of Wallace’s worldview that they find threatening, distasteful, or exploitable for selfish purposes. Unfortunately, the wide range of Wallace’s interests have left him especially vulnerable to such attacks, and the sooner this is fully acknowledged, the better our chances will be of assembling a more valid full picture.

So, we begin with a simple listing of some groups I view as ‘Wallace detractors’:

1. *Darwin Sycophants*. There are a significant number of Darwinophiles out there who regard Darwin as the gold standard of evolutionary theorizers – a characterization that any reasonable person should not dispute. But this doesn’t mean that Darwinism per Darwin is an unassailable edifice that is in no need of modification. This was once thought of Newtonian physics, but look what happened there... It appears to be the position of some sources that Wallacean arguments represent, more than just rational criticisms or possible new leads, a basic threat to the whole philosophy. Despite his many departures from strictly Darwinian views, Wallace himself never thought this. Indeed, in his 1889 book *Darwinism* he even wrote that he felt he was, to some real degree, “more Darwinian than Darwin himself” (Wallace 1905, 2: 22). Yet some observers continue to brand the supporters of Wallace with derogative labels like ‘groupies,’ ‘conspiracy theorists,’ ‘true believers,’ ‘amateurs,’ ‘special pleaders,’ or ‘Darwin tainters,’ seemingly because the former think Darwin is the last word, and that’s that. But are there any ‘last words’ when it comes to understanding nature? Would Darwin himself have been pleased with this position, one that invites a descent into dogmatism?

2. *Darwin Detractors*. Not to be outdone, a ‘poor Wallace’ camp exists at the other end of the spectrum; its members either don’t trust Darwin’s ideas (or even dislike him for some personal reason), or feel Wallace was a good person who received a raw deal. Through this group, Wallace has become, in effect, a pawn. These positions, unfortunately, have the effect either of reducing Wallace’s contributions to a Darwin side-story, or turning him into a hum-drum victim of the ‘old boys’ system. In either case, attention is implicitly diverted from Wallace’s originality, and where it might lead. Some of the members of this camp are outright conspiracy theorists with few other real objectives than trying to embarrass Darwin. But how does this sensationalism over historical outcomes that have long since been water under the bridge help us to understand the finer elements of Wallace’s thought itself?

3. *Biologists Who Decry Wallace’s Non-Natural Science Interests*. Wallace of course

has found many supporters within the natural science community: he is nearly unanimously recognized as a founder of natural selection theory and many of its offshoots, and the entire field of historical biology and biogeography. Most of these folks are, relatively speaking, specialists in elements of these fields of study, and many are antagonistic to his interests outside of them in the social, spiritual, and economic domains. Thus we frequently encounter in their words an implicit ‘two Wallaces’ model of his being, the one portraying him as the genius who developed natural selection and its many applications, the other being the crank of infirm mind who believed in spirits and socialism. Naturally, this presuppositional dichotomy does not help any when one tries to come to grips with the complexities of his actual reasons for reaching the conclusions he did.

4. *Intelligent Design Advocates.* Wallace’s embrace of a ‘final causes’-based cosmology has frequently – usually – been interpreted as giving in to a simple teleology, and once that is made a given, it is easy to distort his position into one sympathetic to intelligent design principles. He is also usually regarded as a theist, but this assumes that he adopted spiritualism as a conventional form of religion, which is not the case. I am now organizing a treatment of this subject which will appear as a two-part work in this series.

5. *The Assumers.* Not nearly enough attention has been given to the frequent mis-assessment of Wallace’s use of terminology, the basis of which is not always apparent from single readings of his words. To begin with, as John van Wyhe and others have pointed out, it is unproductive to contextualize his views in ways not befitting his period of activity. But beyond this, however, even accepted terms he applied – ones such as ‘God,’ ‘teleology,’ ‘theory of natural selection,’ ‘supernatural,’ ‘theist’ – have sometimes been interpreted in a fashion arguably not consistent with his actual intent.

These categories are fairly distinct, yet in each case their sponsors have often turned to what are perceived as imperfections in his process as a means of eroding his credibility. As a group they often target what they feel to be inflexibility in Wallace’s thought, and from there it is but a short step to mount accusations of inconsistency. (Other sources attack him on additional matters – in particular the reliability of his memory, which overall was probably a lot better than he is generally given credit for: see Smith 2020.)

As an introduction to the flexibility question, we need to take a look at Wallace’s understanding of knowledge accumulation, and its importance.

Wallace’s Model of Knowledge Accumulation

Wallace’s understanding of the importance of what I have termed ‘informed belief’ is transparently revealed in one of his signature writings, a letter from the field sent to his brother-in-law in 1861:

...You intimate that the happiness to be enjoyed in a future state will depend upon, and be a reward for, our belief in certain doctrines which you believe to constitute the essence of true religion. You must think, therefore, that belief is *voluntary* and also that it is *meritorious*. But I think that a little consideration will show you that belief is quite independent of our will, and our common expressions show it. We say, “I wish I could believe him innocent, but the evidence is too clear”; or, “Whatever people may say, I can never believe he can do such a mean action.” Now, suppose in any similar case the evidence on both sides leads you to a certain belief or disbelief, and then a reward is of-

ferred you for changing your opinion. Can you really change your opinion and belief, for the hope of reward or the fear of punishment? Will you not say, "As the matter stands I can't change my belief. You must give me proofs that I am wrong or show that the evidence I have heard is false, and then I may change my belief"? It may be that you do get more and do change your belief. But this change is not voluntary on your part. It depends upon the force of evidence upon your individual mind, and the evidence remaining the same and your mental faculties remaining unimpaired – you cannot believe otherwise any more than you can fly.

Belief, then is not voluntary. How, then, can it be meritorious? When a jury try a case, all hear the same evidence, but nine say "Guilty" and three "Not guilty," according to the honest belief of each. Are either of these more worthy of reward on that account than the others? Certainly you will say No! But suppose beforehand they all know or suspect that those who say "Not guilty" will be punished and the rest rewarded: what is likely to be the result? Why, perhaps six will say "Guilty" honestly believing it, and glad they can with a clear conscience escape punishment; three will say "Not guilty" boldly, and rather bear the punishment than be false or dishonest; the other three, fearful of being convinced against their will, will carefully stop their ears while the witnesses for the defence are being examined, and delude themselves with the idea they give an honest verdict because they have heard only one side of the evidence. If any out of the dozen deserve punishment, you will surely agree with me it is these. Belief or disbelief is therefore not meritorious, and when founded on an unfair balance of evidence is blameable.

Now to apply the principles to my own case. In my early youth I heard, as ninety-nine-hundredths of the world do, only the evidence on one side, and became impressed with a veneration for religion which has left some traces even to this day. I have since heard and read much on both sides, and pondered much upon the matter in all its bearings. I spent, as you know, a year and a half in a clergyman's family and heard almost every Tuesday the very best, most earnest and most impressive preacher it has ever been my fortune to meet with, but it produced no effect whatever on my mind. I have since wandered among men of many races and many religions. I have studied man and nature in all its aspects, and I have sought after truth. In my solitude I have pondered much on the incomprehensible subjects of space, eternity, life and death. I think I have fairly heard and fairly weighed the evidence on both sides, and I remain an *utter disbeliever* in almost all that you consider the most sacred truths. I will pass over as utterly contemptible the oft repeated accusation that sceptics shut out evidence because they will not be governed by the morality of Christianity. You I know will not believe that in my case, and I know its falsehood as a general rule. I only ask, Do you think I can change the self-formed convictions of twenty-five years, and could you think such a change would have anything in it to merit *reward* from *justice*? I am thankful I can see much to admire in all religions. To the mass of mankind religion of some kind is a necessity. But whether there be a God and whatever be His nature; whether we have an immortal soul or not, or whatever may be our state after death, I can have no fear of having to suffer for the study of nature and the search for truth, or believe that those will be better off in a future state who have lived in the belief of doctrines inculcated from childhood, and which are to them rather a matter of blind faith than intelligent conviction (Marchant 1916, pp. 65-67).

Wallace's position on 'informed belief' follows a basically Spinozian line, and this explains his willingness to "believe in all that he believes down to the very soles of his boots" (as Peirce put it). Further, he was a big advocate of developing a wide knowledge base, as is evident from one of his earliest writings, sketched about 1843, but only first ap-

pearing in his 1905 autobiography:

...Speaking of a general acquaintance with history, biography, art, and science, I say, "There is an intrinsic value to ourselves in these varied branches of knowledge, so much indescribable pleasure in their possession, so much do they add to the enjoyment of every moment of our existence, that it is impossible to estimate their value, and we would hardly accept boundless wealth, at the cost, if it were possible, of their irrecoverable loss. And if it is thus we feel as to our general store of mental acquirements, still more do we appreciate the value of any particular branch of study we may ardently pursue. What pleasure would remain for the enthusiastic artist were he forbidden to gaze upon the face of nature, and transfer her loveliest scenes to his canvas? or for the poet were the means denied him to rescue from oblivion the passing visions of his imagination? or to the chemist were he snatched from his laboratory ere some novel experiment were concluded, or some ardently pursued theory confirmed? or to any of us were we compelled to forego some intellectual pursuit that was bound up with our every thought? And here we see the advantage possessed by him whose studies have been in various directions, and who at different times has had many different pursuits, for whatever may happen, he will always find something in his surroundings to interest and instruct him."

And further on, as illustrations of the interest in common things conferred by a knowledge of the elementary laws of physical science, I remark –

"Many who marvel at the rolling thunder care not to inquire what causes the sound which is heard when a tightly-fitting cork is quickly drawn from a bottle, or when a whip is cracked, or a pistol fired; and while they are struck with awe and admiration at the dazzling lightning, look upon the sparks drawn from a cat's back on a frosty evening and the slight crackle that accompanies them as being only fit to amuse a child; yet in each case the cause of the trifling and of the grand phenomena are the same. He who has extended his inquiries into the varied phenomena of nature learns to despise no fact, however small, and to consider the most apparently insignificant and common occurrences as much in need of explanation as those of a grander and more imposing character. He sees in every dewdrop trembling on the grass causes at work analogous to those which have produced the spherical figure of the earth and planets; and in the beautiful forms of crystallization on his window-panes on a frosty morning he recognizes the action of laws which may also have a part in the production of the similar forms of plants and of many of the lower animal types. Thus the simplest facts of everyday life have to him an inner meaning, and he sees that they depend upon the same general laws as those that are at work in the grandest phenomena of nature." (Wallace 1905, 1: 201-202)

To make a long story short, Wallace had a well-developed appreciation of how knowledge serves personal and societal growth. The essence of this position was that personal convictions, though based unavoidably on beliefs, are most efficiently and productively built up through continuing dispassionate assessment of the evidence for them.

Considering Wallace's conclusions on this matter, and his intense native curiosity, leading him to innumerable investigations, it would be strange indeed had he *not* had a record of changing his mind frequently. But was this the case? Let us now take a look at some of the things on which Wallace did in fact change his mind, after encountering new sources of evidence. These are not listed in any particular order:

Megafaunal extinctions in the Pleistocene. Earlier in his career he (Wallace 1876) was inclined to think that the die-off of large species at the end of the last Ice Age was due to

climate change. By the time of his *World of Life* (1910), however, it is apparent he had re-considered – and decided that the predatory habits of the humans spreading into new environments at the time was the more likely primary cause.

Necessary utility of adaptation(s). Before 1858, he was not a supporter of the notion of necessary utility (see for example Wallace 1856), but in coming to the concept of natural selection, he reversed himself on this.

Effectiveness of a socialism-run society. Although a Robert Owen follower from even his earliest teen years (Wallace 1905: 1), for decades he never quite believed in the large-scale practicality of Owen's approach, especially in light of its potential incursions on individual rights and freedoms. He remained unconvinced that society could be run on a socialistic program until reading Edward Bellamy's *Looking Backward* in 1889; this changed his mind on both issues.

Spiritualism. Before 1865 Wallace was uncommitted to, and not terribly interested in, the subject, but his in-depth examination of the belief in 1865-1866 turned him into an advocate. The first public indication of the implications of his shift came in remarks he made at the 1868 meetings of the British Association for the Advancement of Science (Wallace 1868).

Acceptance of sexual selection. Until the mid-1860s he largely followed Darwin's lead on sexual selection, but on closer examination decided that the related facts were better explained by more conventional applications of natural selection theory.

Darwin's theory of pangenesis. Wallace was initially impressed with the theory, but quickly lost faith as experimental evidence (e.g., Galton 1870-71) emerged that did not appear to support it.

Smallpox vaccination. Before the late 1870s he was mildly in favor (to the extent even of having his own children vaccinated), but then turned against: "Like so many other people, till a few years back I had not a doubt as to the efficacy of vaccination. I accepted it blindly as one of the established facts of science. Having been led to look into the evidence on the subject, I was first startled by the discrepancy of the statistics of small-pox mortality with the vaccination theory, and on further inquiry I was amazed to find that the evidence in favour of vaccination was of the most shadowy kind..." (Wallace 1883).

Vicariance biogeography. Before about 1860, his biogeography writings featured explanations bordering on vicariance modelling, but most observers (e.g., Fichman 1977; Bueno Hernández & Llorente Bousquets 2003) have concluded that he later increasingly turned to dispersalist interpretations. (This may be so, but I am not personally convinced: rather than an actual change in philosophy, the shift may have been more related to a change in the scale and characteristics of the particular problems he was investigating.)

Changing his diet in his later years. In his autobiography Wallace described himself as a somewhat indiscriminate eater through his middle age years, but then on advice changing his diet to eliminate most carbohydrates and fats.

The role of terminable annuities. Wallace's exact views on how to apply terminal annuities within his land nationalization strategy continued to evolve over the last twenty-

five years of his life.

The absolute centrality of the Sun in the universe. Although his 1903 essay 'Man's Place in the Universe' (Wallace 1903a) argued in favor of absolute centrality, criticism of his stance caused him to abandon this position within the year, as evidenced in his book of the same title (Wallace 1903b).

The meaning of 'rudimentary' organs. Originally Wallace interpreted what we now refer to as 'vestigial characters' as incipient structures (Wallace 1855), but he soon recognized his error and adopted Darwin's position on the subject.

Hybrid sterility. "I was only *half convinced* by my own arguments, and I now think there is about an even chance that Natural Selection may or not be able to accumulate sterility" (from an 1868 letter to Darwin, reproduced in Marchant 1916, p. 172).

'Local causes' explanations for aberrant adaptations. Even after 1858 and his embrace of natural selection, for some twenty years Wallace continued to believe that additional local causes might lie at the root of some adaptive phenomena. But after digesting Fritz Müller's additions to mimicry theory (Wallace 1882), he ceased appealing to such concessions.

Spencerian 'individualism.' For a few years in the mid-1860s Wallace adopted a Herbert Spencer-inspired style of materialism, but soon felt uncomfortable working within this framework (Wallace 1896; Wallace 1905, 1: 104, 2: 266).

Lemurian land-connections. In the 1870s and 80s a discussion raged as to whether in Secondary or Tertiary times a land-connexion existed across the Indian Ocean between India and Madagascar – Wallace thought so in *The Geographical Distribution of Animals* (Wallace 1876), but by his publication of *Island Life* just four years later he had changed his mind.

The influences on mesmeric trance. On page 127 of his 'Notes of Personal Evidence' (Wallace 1875) Wallace writes: "For a long time I thought that the effects produced on the patient were caused by my wishing the particular manifestation; but I found by accident that when, by ignorance of the position of the organs, I placed my finger on a wrong part, the manifestation which followed was not that which I expected, but that which was due to the position touched. I was particularly interested in phenomena of this kind, and by experiments made alone and silently, completely satisfied myself that the effects were not due to suggestion or to the influence of my own mind."

On a suitable marriage partner. "On the question of marriage we probably differ much. I believe a good wife to be the greatest blessing a man can enjoy, and the only road to happiness, but the qualifications I should look for are probably not such as would satisfy you. My opinions have changed much on this point: I now look at intellectual companionship as quite a secondary matter, and should my good stars ever send me an affectionate, good-tempered and domestic wife, I shall care not one iota for accomplishments or even for education." (from an 1862 letter to George Silk reproduced in Marchant 1916, on pages 70-71).

From the preceding list, which doubtlessly could be extended with some additional thought, it becomes apparent that Wallace was in the habit of practicing what he preached.

But was he flexible to the point of being wishy-washy; that is, of adopting whatever enticing new ideas that came along? This is more difficult to assess, but at the least we can provide a sizable list of opinions he maintained for most or all of his professional life:

The behavior of missionaries. Wallace observed the behavior of many missionaries while he was in the field, and continued to follow accounts of their practices afterwards. Throughout, he wrote both approving and critical things about them, depending on circumstances (in *The Malay Archipelago*, for example, he writes: “trading missionaries, teaching what Jesus said, but not doing as He did, can scarcely be expected to do more than give them a very little of the superficial varnish of religion”: Wallace 1869, p. 499).

Notions of the ‘balance of nature.’ Wallace’s sense of a ‘balance of nature,’ seemingly inherited from the views of von Humboldt, remained an element of his thinking through to his death. It underlies his discovery of the natural selection concept, though through this model he was able to advance the notion of a ‘balance’ to one incorporating *dynamic* equilibrium relations: *i.e.*, evolution.

The smallness and lack of brightness of most tropical species. Wallace wrote on this subject frequently throughout his career, apparently sensing that the common opinion on this matter was otherwise.

On the inapplicability of natural selection to the higher attributes. There is no evidence Wallace ever believed that the higher human attributes, moral and intellectual, were developed through natural selection. It has been assumed otherwise since his own time, but see Smith (2004, 2009, 2019).

That domesticated animals are not produced through a ‘natural’ selection process. Even before the 1858 Ternate paper Wallace communicated his feelings on the ‘unnatural’ nature of the domestication process to Darwin in a letter from the field (Marchant 1916, p. 108), and he continued to hold this position through to the end.

The general equivalence of moral and intellectual abilities of civilized and uncivilized peoples. Wallace’s experiences among the latter during his 1848 to 1862 travel years led him to this conclusion, one he never reversed himself on.

The degeneracy theory of civilization. Wallace had adopted the degeneration hypothesis by at least the late 1860s (see Wallace 1869b & 1869c), and held on to it from then on.

The validity of mesmerism and phrenology. His experience with both of these began at Leicester in the 1840s, and he remained an advocate of each through to his last days.

Inheritance of acquired characters. Wallace probably first encountered this key component of Lamarckism with his reading of Charles Lyell’s *Principles of Geology* in the 1840s. He rejected the notion from the beginning, and continued to do so in writings extending into the twentieth century.

Disjunct distributions. The conclusion that isolated populations of the same species separated by significant distances may be taken as evidence of declining groups was a position Wallace embraced from mid-life on.

Alpine glacial lakes. Wallace first commented on the theory that high latitude alpine lakes have been carved by glacial processes in a paper in 1867 (Wallace 1867), and as of the 1890s he was still defending this thinking.

Miracles. Wallace first depicted so-called ‘miracles’ as misunderstood natural events in 1866 (Wallace 1866, pp. 1-11), and continued to do so throughout the remainder of his life.

The preceding lists, which surely are not exhaustive, are meant to defend the simple idea that Wallace was a flexible thinker who felt free either to change his mind or maintain an opinion as the state of evidence demanded. As Charles Peirce noted in one of his book reviews Wallace had a good deal of ‘stick-to-it-ness’ once he *had* an opinion; perhaps this caused him to play his theories as far as they went before shifting his opinion when faced with new, unconforming, information. And just because he ended up accepting some things many others didn’t/don’t, and oftentimes didn’t budge from his opinion, doesn’t necessarily make him stubborn, it just makes him either prescient, or wrong (and on some of these things final judgment is not yet possible). As he noted in the Sims letter, “You must give me proofs that I am wrong or show that the evidence I have heard is false, and then I may change my belief.”

Wallace’s defense of the notion that ‘belief is involuntary’ leaves us to contemplate the matter of choice: not so much as to what may be right or wrong, but as to whether we are willing to adopt an evaluation process that is ultimately useful to sustained societal advance. This itself is the very antithesis of inconsistency.

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