Spirited dispute: the secret split between Wallace and Romanes

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Alfred Russel Wallace’s role in prompting the original publication of On the Origin of Species is now generally acknowledged. Wallace is now widely recognised as ‘Darwin’s co-discoverer’, but the role that he played in the development and promotion of Darwinism is more often overlooked. From the very beginning of their collaboration in 1858, there were important differences between the works of Wallace and Darwin. Within Darwin’s lifetime, the two men also disagreed over several significant evolutionary debates, most notably the role that Natural Selection might play in evolution. Following Darwin’s death in 1882, Wallace set about promoting his own version of ‘Darwinism’, but not without opposition. A rather ungentlemanly debate between Wallace and Darwin’s chief disciple George John Romanes throws light on the contested nature of what it meant to be a Darwinian in the late nineteenth century.

The rejected request
In 1892, a decade after the death of Charles Darwin, the author of a new book on Darwin approached Alfred Russel Wallace, the celebrated ‘co-discoverer’ of natural selection. He requested permission to include Wallace’s portrait in the forthcoming publication. He was refused point blank.

Wallace’s reticence would be easy to explain if the new book had been one of many seeking to criticise Darwin’s work. But it was not. The author of Darwin and After Darwin: An Exposition of the Darwinian theory and Discussion of Post-Darwinian Questions was George John Romanes, considered by some to be “Darwin’s chief disciple” [1] and a man with whom Wallace had much in common. Just a couple of years earlier, in 1889, Wallace had published his own book of Darwinian theory entitled Darwinism: An Exposition of the Theory of Natural Selection with some of its Applications.

But Wallace and Romanes had their differences, chiefly over the mechanisms involved in evolution and over what it meant to be Darwinian. Indeed, in 1886, Wallace spelt out these differences in an article published in the Fortnightly Review entitled “Romanes versus Darwinism” [2]. There is, however, an even more compelling explanation for Wallace’s decision to turn down Romanes’ request for a portrait. It is buried within Wallace’s autobiography, published much later in 1905, and reveals a personal tension between the men tinged with scientific controversy and with more than a whiff of blackmail. This story adds an intriguing dimension to interpretations of Darwinism in a post-Darwinian world.

Darwinism according to Wallace
Wallace was the most prominent and prolific of the supporters of Darwinism in late nineteenth-century Britain, the last of the circle of contemporary friends and allies that had surrounded Darwin during his lifetime. Consequently, many viewed him as a particularly authoritative commentator, not only on the Darwinian heritage but also on new developments in the evolutionary field. In 1894, American paleontologist Henry Fairfield Osborn described Wallace as “...one of the leaders of thought in contemporary evolution” [3]. At the turn of the century, the novelist Samuel Butler – a long time critic of Darwin – referred to Wallace as “the most authoritative exponent of latter day evolution,” describing his Darwinism as “so far Darwinistic that it develops the teaching of Mr. Darwin in the direction given to it by Mr. Darwin himself” [4].

From the 1870s, however, big differences between Darwin and Wallace began to appear [5]. Most notably, perhaps, they disagreed over mechanisms of inheritance. In 1868, Darwin published The Variation of Plants and Animals under Domestication in which he outlined his theory of “pangenesis” (Box 1). This made room alongside natural selection for the ‘inheritance of acquired characters’, an umbrella term for several non-selectionist evolutionary mechanisms whereby modifications to a parent organism caused by its environment can be passed on to its offspring. The best-known version of this form of inheritance is ‘Use and Disuse’ or ‘Use Inheritance’ (Box 2). Wallace, by contrast, was convinced of the “overwhelming importance” of Natural Selection, considering it the only mechanism at work in non-human evolutionary processes [6]. As a strict selectionist, stricter even than Darwin himself, he dismissed all forms of inheritance of acquired characteristics. That included pangenesis.

There was another important difference between Darwin and Wallace. In Wallace’s words, Darwin believed ‘that the rudiments of most, if not all, the mental and moral faculties of man can be detected in some animals’ [7]. Wallace thought differently. Although he maintained that the human species had evolved by natural selection, he nevertheless believed that their intellectual capabilities must have arisen by spiritual means: the mathematic, artistic and musical abilities of civilised man, he argued, could not be the products of natural selection but were evidence of a spiritual world. In Darwinism, he even went so far as to suggest that ‘the whole purpose, the only raison
Box 1. Pangenesis

Darwinian Pangenesis attempted to explain several phenomena that Darwin hypothesised were connected: reversion, or how a character can be inherited from a remote ancestor; the transmission of the characteristics of use and disuse to offspring; the exact re-growth of amputated parts in some animals; graft hybrids, which can be produced independently of the organs of generation; how the same plant can be produced through budding or from seeds; differences in developmental stages in allied organisms; and the observed direct action of the male element on the female in some plants.

Darwin proposed that at every stage of its development, each part of an organism releases a “gemmule”, which can reproduce into a facsimile of the parts from which it was released. These gemmules have a mutual affinity, allowing them to aggregate in the sexual elements or buds of an organism. Not only did they play a part in the production of the next generation, Darwin argued, but crucially could lie dormant to be transmitted to future generations. Therefore it is not only the reproductive organs of an organism that give rise to a new organism, but also every part or unit of the parent organism.

It is important to note that, as Darwin pointed out in the 2nd edition of Variation, pangenesis was a hypothesis “...which manifestly applies to plants and the lower animals...”, and not necessarily to higher animals. A large proportion of the phenomena he used it to explain and much of the evidence he provided in support of it came from plants.

The writings of Wallace (especially those on mimicry, etc.) contain many admirable, original contributions to the Theory of Selection. It is most unfortunate that the imagination of this gifted naturalist has since become diseased, and that he now only plays the part of a spiritualist in the spiritualistic society of London [9].

Nevertheless, with the publication of The Variation of Plants and Animals under Domestication in 1868 and The Descent of Man in 1871, Darwin and Wallace found themselves at a rather ironic impasse: Wallace had become more reliant on natural selection than Darwin himself. In the main, he thought that natural selection was the sole cause of evolution, relaxing this position only in relation to the evolution of human intelligence for which he allowed a form of “spiritual” involvement. On all other matters, he stuck to his selectionist guns, claiming in his book to be “the advocate of Pure Darwinism”:

Although I maintain, and even enforce, my differences from some of Darwin’s views, my whole work tends forcibly to illustrate the overwhelming importance of Natural Selection over all other agencies in the production of new species. I thus take up Darwin’s earlier position, from which he some-what receded in the later editions of his works, on account of criticisms and objections which I have endeavoured to show are unsound [10].

Box 2. Use inheritance

‘Use and disuse’ or ‘use inheritance’ is most often illustrated with reference to a giraffe’s neck or a blacksmith’s arm. In the first example, the short-necked ancestors of the modern giraffe strain necks up to reach leaves at the tops of trees. The effects of this use of neck muscles are passed on to offspring until, after successive generations of incremental increase in neck length, giraffes end up with a much longer neck than their short-necked ancestors.

In the second example, the son of a Blacksmith inherits his father’s muscles, muscles that had been increased through repeated use. This type of use inheritance is usually identified as the central mechanism of evolutionary change in the earlier work of Jean-Baptiste Lamarck, especially as outlined in his book Philosophie Zoologique of 1809. It is therefore sometimes referred to as Lamarckism. However, it is important to note that ‘Use and Disuse’ is not the only type of inheritance of acquired characters. ‘Use and Disuse’ as an evolutionary mechanism was evident, alongside other forms of the ‘inheritance of acquired characters’, throughout Darwin’s work from the first edition of the Origin onwards.

Darwinism according to Romanes

George John Romanes, on the other hand, felt that the Darwinian doctrine represented something entirely different. Romanes was regarded by some as Darwin’s leading disciple, especially when it came to evolutionary psychology. In a draft of his Reminiscences of My Father’s Everyday Life Darwin’s son noted that ‘Of quite the younger men Romanes was perhaps his chief friend’ [11]. Romanes supported Darwin’s view that the human mind is an extension of the animal mind and is therefore born out of evolutionary factors rather than supernatural involvement. Romanes had met Darwin in 1874 and they became friends through correspondence and meetings until Darwin’s death in 1882. Romanes’ wife Ethel later described their acquaintance as ‘an unbroken friendship, marked on one side by absolute worship, on the other by an almost fatherly kindness and a wonderful interest in the younger man’s work and in his career’ [12]. She further commented that ‘Perhaps no hero-worship was ever more unselfish, more utterly loyal or more fully rewarded’ [13].

The first volume of Romanes’ Darwin and After Darwin appeared in 1892, just 2 years before his death on 23 May 1894. The second and third volumes were completed and published posthumously [14]. In Ethel Romanes’ words Darwin and After Darwin was penned with ‘the writer’s life blood’ [15]. It was for the first volume that Romanes’ publisher had approached Wallace for his portrait.

Darwin and After Darwin offered a version of Darwinism that differed from the ‘pure’ version presented by neo-Darwinians like Wallace [16]. Since 1874, Romans and Darwin had been engaged in several horticultural experiments involving graft-hybrids, designed to explore mechanisms of inheritance and provide evidence for pangenesis. Romanes thus became Darwin’s most stalwart supporter at the time when Wallace’s theories were significantly deviating from those of Darwin [17]. Remaining faithful to his mentor, Romanes coined the term ‘Neo-Darwinian’ to describe ‘biologists who of late years have been led by Weismann to adopt the opinions of Wallace’. He was clearly troubled that they could ‘represent as anti-Darwinian the opinions of other biologists who still adhere to the unadulterated doctrines of Darwin’ [18].
There was no love lost between Romanes and Wallace. They were at odds over several scientific matters, including the inheritance of acquired characteristics, the significance of geographical isolation for the origin of new species, the evolution of the human mind and the importance of sexual selection. They also obviously vehemently disagreed about how Darwin’s work should be portrayed. This much is clear from a letter Romanes wrote to Darwin’s son Francis in 1889 in which he attacked the self-termed ‘pure-Darwinians’ or as he referred to them the ‘neo-Darwinians’.

By endeavouring, with Wallace and Weismann, to make Natural Selection all in all as the sole cause of adaptive structure, and expressly discarding the Darwinian recognition of use and dis-use, I think they are doing more harm to Natural Selection theory itself. Moreover, because I do not see any sufficient reason as yet to budge from the real Darwinian standpoint (Weismann has added nothing to the facts which were known to Charles Darwin), the post-Darwinians accuse me of moving away from Darwinian principles. But it is they who are moving, and, because they see a change in our relative positions, affirm that it is I. In point of fact, my position has never varied in the least... [19]

Clearly, all this could explain why Wallace refused to be pictured in Romanes’ book on the Darwinian legacy. However, the showdown that finally severed connections between them was far less gentlemanly than a mere scientific quarrel.

The letters

While Darwin was still alive, Romanes had shown a passing interest in spiritualism [20]. This was something of which Darwin famously disapproved. It is easy to imagine how disappointed he must have been that his new disciple, whose work he considered to be a continuation of his own [21], was potentially following Wallace down the road towards supernatural explanations.

It was, in fact, in 1880 that Romanes and Wallace had first become acquainted, following the publication of an anonymous letter to Nature about Mesmerism and clairvoyance [22]. Romanes objected, also in an anonymous letter, to the publication of such a letter in a scientific journal. He called for further experimentation into spiritualist phenomena. Wallace responded, asserting that this was a pointless exercise as others ‘had thoroughly examined and tested Mesmerism and clairvoyance, getting only abuse and ridicule’ [23]. Following a brief correspondence Wallace invited Romanes to visit him. They only met a couple of times to discuss evidence for spiritual phenomena, then left their acquaintance at that.

Several years later, in 1887, while on a lecture tour in Canada, Wallace gained access to unpublished letters from Romanes and his brother to Darwin concerning spiritualism [24]. In his autobiography, My Life: A Record of Events and Opinions, Wallace described how the correspondence, dated 1876, fell into his hands:

A lady who was interested in spiritualism spoke to me, and asked me if I knew that Romanes was a spiritualist, and had tried to convert Darwin. I told her that I knew he was interested in the phenomena of spiritualism, but that I thought it most improbable that he had said anything to Darwin. ‘But,’ said she, ‘Professor Romanes’ brother is a great friend of mine, and he gave me the drafts of letters they jointly wrote to Darwin. Would you like to see them?’ I said I most certainly should, and she promised to bring them the next morning [24].

With the woman’s permission, Wallace copied notes from these letters. He did, however, stress that he had ‘no intention of referring to these letters in any way without Romanes’ permission’ [25]. According to Wallace’s later recollection Darwin’s response to the brothers’ letter ‘was of the usual kind – suggestion of clever trickery; more investigation required; had no time to go into it himself, etc.’ [26].

A few years later, still unaware of Wallace’s find, Romanes criticised Wallace’s Darwinism in no uncertain terms. Of its final chapter, he wrote, ‘we encounter the Wallace of spiritualism and astrology, the Wallace of vaccination and the land question, the Wallace of incapacity and absurdity’ [27].

This did not go down well with Wallace, who wrote to Romanes to let him know he had seen the letters ‘and perhaps puzzle and frighten him a little by exhibiting an acquaintance with facts which he evidently wished to conceal’ [28]. There followed a rather unseemly correspondence between the two in which Wallace attempted to force Romanes to publish his letters to Darwin concerning spiritualism to expose what he saw as hypocrisy. Wallace’s autobiography gives us tantalising glimpses of the contents of the offending letters:

In the year 1876 you wrote two letters to Darwin, detailing your experiences of spiritual phenomena. You told him that you had had mental questions answered with no paid medium present. You told him you had had a message from Mr. J. Bellew which message was worded in a manner so unexpected that it was, till completed, thought to be erroneous. And you declared your belief that some non-human intelligence was then communicating with you. You also described many physical phenomena occurring in your own house with the medium Williams. You saw hands apparently human, yet not those of any one present. You saw hand-bells, etc., carried about; you saw a human head and face above the table, the face with mobile features and eyes... In your second letter to Darwin you expressed your conviction of the truth of these facts, and of the existence of spiritual intelligences, of mind without brain. You said these phenomena had altered your whole conceptions. Formerly you had thought there were two mental natures in Crookes and Wallace – one sane, the other lunatic! Now (you said) you belonged to the same class as they [29].

Romanes replied to Wallace stating that he had kept no copies of the letters but did recall two points clearly:

The first is that the letters were to be strictly private, and the next is that they were to be regarded as provisional. Now, after these letters were written, further work with Williams showed him to be an
impostor. I spent an immense deal of time and trouble over the matter, and in the end withdrew the opinions expressed in these letters [30].

He seemed concerned as to where Wallace had gained access to the letters. ‘If you have gained your knowledge of their contents by any occult process, I hope you will publish them as evidence, which in that case I would not be wanting in courage to back,’ Romanes quipped [30].

Needless to say, there was no amicable resolution but it is in his autobiographical account of this spat that Wallace recalled Romanes’ request for a photograph ‘for a forthcoming book of his on the Darwinian theory! This I declined with thanks’ [31].

Conclusion
What Wallace’s motives were for recounting this sorry tale 11 years after Romanes’ death we can only guess at. Was it an attempt to disguise a deeper and potentially damaging scientific argument over the ‘Darwinian’ legacy at a time when it was under significant attack from the emerging Mendelian’s or an attempt at publicly explaining the rift between the two men. There can be little doubt that this private disagreement between Darwin’s ‘chief disciple’ and Darwin’s ‘co-discoverer’ further exacerbated the polarisation between their views on the significance of Natural Selection, the inheritance of acquired characteristics, and the very nature of Darwinism itself. It also showed a somewhat unforgiving side to Wallace. In 1893, during the illness that eventually led to Romanes’ death, a third party moved by Romanes’ expression of regret over his lack of standing in Wallace’s eyes wrote to Wallace to try to effect a reconciliation between them. However, Wallace refused to write to Romanes unless he sent him a letter, which Wallace could then publish after his death. This letter was to state that Romanes’ quite public scientific criticisms of Wallace were unfounded. Romanes died without ever hearing from Wallace again.

References
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14 Ibid., pp. 347–350
15 Ibid., p. 279
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31 Ibid., p. 326
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