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Wallace, Spiritualism, and Beyond: "Change," or "No Change"?

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In Chapter 18 the reader received a short introduction to elements of what I have termed the "no change of mind" model of Alfred Russel Wallace's evolving thought on the place of humankind in the evolutionary process. It was there pointed out, obliquely, that most previous writers had unjustifiably assumed: (1) as of 1858 Wallace thought human evolution was a function of the same basic causal influences as had effected plant and animal change, and (2) that even after that date his position on the necessary utility of adaptations had remained similar to his earliest thoughts on the matter. Regarding the latter point, it seems quite clear, on the basis of his own writings before 1858,[1] that the reasoning spelled out in the "Ternate" essay "On the Tendency of Varieties to Depart Indefinitely From the Original Type" (S43 1858) instead represents a sharp break from his earlier position. One can reasonably argue, in fact, that the main intellectual breakthrough expressed in "On the Tendency ..." is Wallace's unanticipated linking of a necessary utility argument to Malthusian thinking.

My impressions of the early evolution of Wallace's thoughts on utility appear in some detail elsewhere (Smith 1991, 1992/1999, 2003–), and inasmuch as Wallace's own words during the pre-1858 period state the case clearly enough, we will not dwell on this theme much further here. Instead, our attention will focus largely, after a short treatment of a few more relevant aspects of the Ternate essay, on events from the years 1862 through 1869, including Wallace's adoption of spiritualistic beliefs. It is my intent to show how a close study of Wallace's personal and professional involvements during that period provides considerable support for the "no change of mind" interpretation.

"On the Tendency ..."

The notion that Wallace "changed his mind" about (actually, *reversed* himself on) natural selection's all-sufficiency in explaining the evolution of humankind's

"higher" attributes (morality, mathematical, and artistic abilities, etc.) arises in large part from two common misappraisals of the 1858 Ternate essay. The first is the uncritical assumption that the work represented a simple progression of thought from his 1855 "Sarawak law" essay (S20). Nothing could be further from the truth. In fact, deceived by his long-standing conclusions on the non-necessary utility of adaptive structures, Wallace had given up, at least for the time being, on finding any kind of functional link between adaptation and the evolutionary process,[2] and instead was concentrating his attention on spatio-temporal aspects of the natural record of speciation. Probably his earlier experience as a surveyor and mapmaker contributed to the latter emphasis; eventually he was able to visualize a process resulting in a geological and geographical distribution of forms that strongly invited an evolutionary interpretation. Wallace's conclusions impressed some workers,[3] but only to the extent that they accounted for *results* emerging from some yet unknown vehicle of change. Indeed, "On the Law ..." contains not even the slightest allusion to possible actuating mechanisms—that is, to anything akin to natural selection. This "results-driven" approach is continued in his works published between 1855 and 1858 (notably, S25 1856, S26 1856, S38 1857, S40 1858, and S41 1858) that apply the model to actual biogeographical situations.

I have suggested in the works mentioned above, along with my other essay here, originally published elsewhere (Smith 2004b), that Wallace's inattention to the dynamics of the adaptive process for so many years may in part have stemmed from his rather strict position on the nature of belief: specifically, how one's beliefs cannot be overturned by less than a productive confrontation with new, countermanding, information. (See in this connection the long and classic quotation from the letter to Thomas Sims, his brother-in-law, reproduced in Chapter 18.) In parallel fashion, he may have thought that adaptive structures merely emerged, idiosyncratically and unpredictably,[4] and that only once in place were they then secondarily shaped by remotely constituted forces—probably large-scale, long-term environmental ones such as climate and geological change. This Bauplan-esque approach (actually somewhat Buffonian in character) at least obviated any need to view the link between adaptive structure and ecological function as first causes-mediated—probably a more pressing concern for him at the time.

The idea that there were always more "recondite" (one of his favorite terms) forces lying behind natural organization thus developed early on in Wallace's mindset, and he never really got off this train. Even the breakthrough on necessary utility resulting in the Ternate essay had no perceptible effect on his thinking in this regard; in particular, he probably still felt that human actions and beliefs came about and were maintained for reasons that were not always strictly utilitarian. It has long been thought, and is no doubt true, that as of 1858 Wallace had been giving much thought to the forces that might be contributing to human evolution, but on this correlative basis alone it has been assumed in most quarters that the Ternate essay described a process fully incorporating humans into the equation.

This brings us to the second misappraisal. In reality, there is no evidence in the essay itself—or anywhere else, for that matter—that this was the case. First, and

straightforwardly enough, humankind is not mentioned in it. Second, Wallace himself never claimed later he ever intended such an interpretation—and in all likelihood, wouldn't he have done so, at some point, had he? Lastly, the whole essay is couched in a "special case" kind of argument involving domesticated forms ("It will be observed that this argument rests entirely on the assumption, that *varieties* occurring in a state of nature are in all respects analogous to or even identical with those of domestic animals, and are governed by the same laws as regards their permanence or further variation": S43, 54)—one in which it is not clear, perhaps deliberately, which outcome is meant to represent the exception and which the rule. Recall that Wallace had invoked Malthusian logic to help him contextualize the dynamics of change, and that, in his later words, "it then occurred to me that these checks must also act upon animals" (S726 1898b, 140). Had he perhaps been thinking about the kinds of forces that might transcend Malthusian kinds of control *first*, only secondarily recognizing how its strict application to animals invited "natural selection"? If so, he may also have been considering other analogues to domestication—including the later rejected picture of man as "God's domestic animal" (S716 1871, 372)—while feeling his way toward the survival of the fittest concept.

I believe it can now be considered as given that "Tendency" at the least represented a major break in Wallace's approach to the subject of necessary utility—but beyond that it may also have been, through his avoidance of discussion on the matter, his first step toward developing an argument that humankind rises above biologically material controls. This would explain, as mentioned below, Wallace's strange apology, made five times in print over a four-decade period, that he hadn't been allowed to view his proofs before the paper was rushed into print: the origins of humankind's higher attributes remained an issue for him after 1858, and he found it a bit grating (or exasperating) that everyone had put words in his mouth.

The implication is that Wallace must have found himself in a bit of a quandary as he headed home to England from Singapore in the spring of 1862. Yes, in outline the hypothesis he had written home about in 1858 did in many ways closely resemble the one Darwin had come up with, but he may well have felt he had been outmaneuvered and now could not speak his mind fully on the subject. Any of several reasons might explain why he didn't, at least just then, go ahead and do so. First, he had not yet reflected on the full implications of his collections; thus it was possible he had initially overlooked something that only later might provide direction. Second, the people he was dealing with were clearly, in more than one way, The Establishment, and could have made things very difficult for him had they felt he was crossing them. He might also have felt, probably quite rightly, that creating a fuss so soon after the initial victories could have put the whole evolution by natural selection theory in jeopardy—something he clearly would not have wanted. Further, the appearance of a reversal so soon after the initial presentation of the idea would have damaged his credibility, perhaps even making him look foolish. Lastly, there was the matter of Darwin's priority on the subject, established

(in Wallace's eyes, anyway) by an attention of twenty years' duration. On the basis of any or all of these reasons, it is hardly surprising that at that point he expressed no dissenting views.[5]

Nevertheless, this really only explains why he posed no *contrary* views. As detailed in Smith (2003–), the degree of Wallace's *complete* silence for so many years on the theory to which he had helped give birth is remarkable in itself. It is a fact that he no more than names or alludes to the natural selection concept in his writings after February 1858 until he springs into action in the critical essay "Remarks on the Rev. S. Haughton's Paper on the Bee's Cell, and on the Origin of Species" (S83), as late as October of 1863. No past writer has ever paid any attention to this matter, though it would appear that this is one instance where a lack of action is very telling (Benton's disagreement in Chapter 20 notwithstanding[6]). Simply, it seems he could not decide which way to turn next. At first choosing to remain in the field for another four years, he bided his time until he could return to civilization, absorb the full meaning of his collections, and give fuller attention to the "higher attributes" issue at that point.

Directly on returning to England in early 1862 Wallace set sail again, this time launching himself into the uncertain waters of the London intellectual stream. This is most plainly evidenced by his regular appearances—either to sit or comment, or present papers—at the meetings of no fewer than seven different professional societies.[7] For a couple of years most of his time was devoted to reviewing his collections of birds and insects, but he undoubtedly was also contemplating his special problem. An important new development in this connection was a sudden increase in his interest in the writings of Herbert Spencer. He read Spencer's new work *First Principles*, and an older one, *Social Statics*, and even went to visit Spencer with his old friend Bates, as memorably recounted in *My Life* (S729 1905a, 2:23–24), for inspiration regarding the search for the "origin of life." Spencer shied away from comment. Still, the combined effect of Darwin and Spencer was enough to turn him temporarily down a materialist path, the most obvious fruits of which were his papers "The Origin of Human Races and the Antiquity of Man Deduced From the Theory of 'Natural Selection' " (S93) and "On the Phenomena of Variation and Geographical Distribution as Illustrated by the Papilionidae of the Malayan Region" (S96), delivered within weeks of one another in March 1864 to meetings of the Anthropological and Linnean Societies, respectively. But even the general success of the first paper (including the expressed approvals of both Spencer and Darwin), with its glowing coda on the future evolution of humankind, was ultimately not enough to convince him of its full validity. The search went on for "more recondite" forces.

Happily, Wallace's subsequent progression of thought on these matters is transparently evident in several of his lesser known publications from this period, and his concurrent pattern of professional attentions. We can now turn to this subject in some detail.

Wallace the Questioner

In September 1864, after a rather quiet six-month period broken only by a publication on the systematics of Eastern parrots (S102), Wallace presented a paper entitled "On the Progress of Civilization in Northern Celebes" (S104) at the annual meetings of the British Association for the Advancement of Science. It is in this paper that he begins to connect human to societal evolution—specifically, to those elements of the process that cannot be conceived simply in physical body terms. In Smith (2003–, Chapter 1) I discuss Wallace's long-standing support of the notion that a "many-directioned experience" is vital to one's progressive development. (Interestingly, the *very first line* of his first published work, written about 1841 for a town history [S1a 1845], is a quotation from Bacon: "Knowledge is power"!) This is certainly the central theme of his "The Advantages of Varied Knowledge" (S1 1905), a lecture written in 1843, and such ideas are extended obliquely to how whole civilizations advance in "The South-Wales Farmer" (S623 1905), written the same year. In the "Progress" paper he exposes his usually guarded Eurocentric side by arguing that in order to advance, wholly uncivilized peoples might benefit from a mild, if well-meaning, attitude of despotism:

> ... there is in many respects an identity of relation between master and pupil, or parent and child, on the one hand, and an uncivilised race and its civilised rulers on the other. We know, or think we know, that the education and industry, and the common usages of civilised man, are superior to those of savage life; and, as he becomes acquainted with them, the savage himself admits this. He admires the superior acquirements of the civilised man, and it is with pride that he will adopt such usages as do not interfere too much with his sloth, his passions, or his prejudices. But as the wilful child or the idle schoolboy, who was never taught obedience and never made to do anything which of his own free will he was not inclined to do, would in most cases obtain neither education nor manners; so it is much more unlikely that the savage, with all the confirmed habits of manhood, and the traditional prejudices of race, should ever do more than copy a few of the least beneficial customs of civilisation, without some stronger stimulus than mere example.[8]

Much of Wallace's discussion in this essay can be linked to his belief that the uncivilized inhabitants of the area had been positively affected by the introduction of coffee plantation culture by the Dutch. Nevertheless, he is also contemplating the kinds of forces that might *in general* help raise people's consciousness levels—in particular, those that might sponsor a form of "informed belief" (*i.e.*, systems of knowledge based on valid assumptions) useful to societal evolution.[9]

Wallace's next exploration of an "informed belief"-relatable theme came in an essay-like letter printed in *The Reader* issue of 6 May 1865 under the title "Public Responsibility and the Ballot." Nominally, this work represented an answer to opinions stated in the previous issue by John Stuart Mill, one of Wallace's idols.

... Mr. Mill truly says, that a voter is rarely influenced by "the fraction of a fraction of an interest, which he as an individual may have, in what is beneficial to the public," but that his motive, if uninfluenced by direct bribery or threats, is simply "to do right," to vote for the man whose opinions he thinks most true, and whose talents seem to him best adapted to benefit the country. The fair inference from this seems to be, that if you keep away from a man the influences of bribery and intimidation, there is no motive left but to do what he thinks will serve the public interest—in other words, "the desire to do right." Instead of drawing this inference, however, it is concluded that, as the "honest vote" is influenced by "social duty," the motive for voting honestly cannot be so strong "when done in secret, and when the voter can neither be admired for disinterested, nor blamed for selfish conduct." But Mr. Mill has not told us what motive there can possibly be to make the man, voting in secret, vote against his own conviction of what is right. Are the plaudits of a circle of admiring friends necessary to induce a man to vote for the candidate he honestly thinks the best; and is the fear of their blame the only influence that will keep him from "mean and selfish conduct," when no possible motive for such conduct exists, and when we know that, in thousands of cases, such blame does not keep him from what is much worse than "mean and selfish conduct," taking a direct bribe?

Perhaps, however, Mr. Mill means (though he nowhere says so) that "class interest" would be stronger than public interest—that the voter's share of interest in legislation that would benefit his class or profession, would overbalance his share of interest in the welfare of the whole community. But if this be so, we may assert, first, that the social influence of those around him will, in nine cases out of ten, go to increase and strengthen the ascendency of "class interests," and that it is much more likely that a man should be thus induced to vote for class interests as against public interests, than the reverse. In the second place, we maintain that any temporary influence whatever, which would induce a man to vote differently from what he would have done by his own unbiassed judgment, is bad—that a man has a perfect right to uphold the interests of his class, and that it is, on the whole, better for the community that he should do so. For, if the voter is sufficiently instructed, honest, and far-seeing, he will be convinced that nothing that is disadvantageous to the community as a whole can be really and permanently beneficial to his class or party; while, if he is less advanced in social and political knowledge, he will solve the problem the other way, and be fully satisfied that in advancing the interests of his class he is also benefiting the community at large. In neither case, is it at all likely, or indeed desirable, that the temporary and personal influence of others' opinions at the time of an election, should cause him to vote contrary to the convictions he has deliberately arrived at, under the continued action of those same influences, and which convictions are the full expression of his political knowledge and honesty at the time?

It seems to me, therefore, that if you can arrange matters so that every voter may be enabled to give his vote uninfluenced by immediate fear of injury or hope of gain (by intimidation or bribery), the only motives left to

> influence him are his convictions as to the effects of certain measures, or a certain policy, on himself as an individual, on his class, or on the whole community. The combined effect of these convictions on his mind will inevitably go to form his idea of "what is right" politically, that idea which, we quite agree with Mr. Mill, will in most cases influence his vote, rather than any one of the more or less remote personal interests which have been the foundation of that idea. From this point of view, I should be inclined to maintain that the right of voting is a "personal right" rather than a "public duty," and that a man is in no sense "responsible" for the proper exercise of it to the public, any more than he is responsible for the convictions that lead him to vote as he does. It seems almost absurd to say that each man is responsible to every or to any other man for the free exercise of his infinitesimal share in the government of the country, because, in that case, each man in turn would act upon others exactly as he is acted upon by them, and thus the final result must be the same as if each had voted entirely uninfluenced by others. What, therefore, is the use of such mutual influence and responsibility? You cannot by such means increase the average intelligence or morality of the country; and it must be remembered, that the character and opinions, which really determine each man's vote, have already been modified or even formed by the long-continued action of those very social influences which it is said are essential to the right performance of each separate act of voting. It appears to me that such influences, if they really produce any fresh effect, are a moral intimidation of the worst kind, and are an additional argument in favour of, rather than against, the ballot.
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> ... it seems to me that in the days of standing armies, of an elaborate Poor Law, of State interference in education, of the overwhelming influence of wealth and the Priesthood, we have *not* arrived at that stage of general advancement and independence of thought and action in which we ought to give up so great and immediate a benefit to thousands as real freedom of voting, for the infinitesimal advantage to the national character which might be derived from the independent and open voting of the few who would feel it compatible with their duty to their families to struggle against unfair influence and unjust intimidation (S110 1865, 517).

The essence of this argument is that there is only one way to change materially the implications of a vote—at least in a positive way—and that is to evolve a voter who "is sufficiently instructed, honest, and far-seeing, [that] he will be convinced that nothing that is disadvantageous to the community as a whole can be really and permanently beneficial to his class or party." The underlying point at issue remains how to "raise the average intelligence or morality" of people. Slowly but surely, Wallace is coming to an answer on this matter, one in fact he had dimly recognized many years before in his first essays, and in the Sims letter referred to earlier: there being no merit to uninformed belief, people have to begin to take seriously that, as he later expressed it, "the thoughts we think and the deeds we do here will certainly affect our condition and the very form and organic expression

of our personality hereafter" (S451 1892, 648). So, what kind of influence might cause them to "take seriously" that "hereafter"...?

Only ten days later, on 16 May 1865, Wallace attended a meeting of the Anthropological Society of London. There, the Revd J. W. Colenso delivered the paper "On the Efforts of Missionaries Among Savages." Wallace uttered a few brief comments on the spot (S111), but was unable to let the subject alone. The essay that emerged, "How to Civilize Savages" (S113), was printed in the 17 June 1865 issue of *The Reader.* Its tone and message may be gathered from the following lengthy excerpts:

> Do our missionaries really produce on savages an effect proportionate to the time, money, and energy expended? Are the dogmas of our Church adapted to people in every degree of barbarism, and in all stages of mental development? Does the fact of a particular form of religion taking root, and maintaining itself among a people, depend in any way upon race—upon those deep-seated mental and moral peculiarities which distinguish the European or Aryan races from the negro or the Australian savage? Can the savage be mentally, morally, and physically improved, without the inculcation of the tenets of a dogmatic theology? ...
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> If the history of mankind teaches us one thing more clearly than another, it is this—that true civilization and a true religion are alike the slow growth of ages, and both are inextricably connected with the struggles and development of the human mind. They have ever in their infancy been watered with tears and blood—they have had to suffer the rude prunings of wars and persecutions—they have withstood the wintry blasts of anarchy, of despotism, and of neglect—they have been able to survive all the vicissitudes of human affairs; and have proved their suitability to their age and country by successfully resisting every attack, and by flourishing under the most unfavourable conditions.
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> A form of religion which is to maintain itself and to be useful to a people, must be especially adapted to their mental constitution, and must respond in an intelligible manner to the better sentiments and the higher capacities of their nature. It would, therefore, almost appear self-evident that those special forms of faith and doctrine which have been slowly elaborated by eighteen centuries of struggle and of mental growth, and by the action and reaction of the varied nationalities of Europe on each other, cannot be exactly adapted to the wants and capacities of every savage race alike. Our form of Christianity, wherever it has maintained itself, has done so by being in harmony with the spirit of the age, and by its adaptability to the mental and moral wants of the people among whom it has taken root ...
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> In the early Christian Church, the many uncanonical gospels that were written, and the countless heresies that arose, were but the necessary results of the process of adaptation of the Christian religion to the wants and capacities of many and various peoples. This was an essential feature in the growth of Christianity. This shows that it took root in the hearts and feelings of men, and became a part of their very nature. Thenceforth it grew with their growth, and became the expression of their deepest feelings and of

their highest aspirations; and required no external aid from a superior race to keep it from dying out ... In many places we have now had missions for more than the period of one generation. Have any self-supporting, free, and national Christian churches arisen among savages? If not—if the new religion can only be kept alive by fresh relays of priests sent from a far distant land—priests educated and paid by foreigners, and who are, and ever must be, widely separated from their flocks in mind and character—is it not the strongest proof of the failure of the missionary scheme? Are these new Christians to be for ever kept in tutelage, and to be for ever taught the peculiar doctrines which have, perhaps, just become fashionable among us? Are they never to become men, and to form their own opinions, and develop their own minds, under national and local influences? If, as we hold, Christianity is good for all races and for all nations alike, it is thus alone that its goodness can be tested; and they who fear the results of such a test can have but small confidence in the doctrines they preach.

But we are told to look at the results of missions. We are told that the converted savages are wiser, better, and happier than they were before—that they have improved in morality and advanced in civilization—and that such results can only be shown where missionaries have been at work. No doubt, a great deal of this is true; but certain laymen and philosophers believe that a considerable portion of this effect is due to the example and precept of civilized and educated men—the example of decency, cleanliness, and comfort set by them—their teaching of the arts and customs of civilization, and the natural influence of superiority of race. And it may fairly be doubted whether some of these advantages might not be given to savages without the accompanying inculcation of particular religious tenets. True, the experiment has not been fairly tried, and the missionaries have almost all the facts to appeal to on their own side; for it is undoubtedly the case that the wide sympathy and self-denying charity which gives up so much to benefit the savage, is almost always accompanied and often strengthened by strong religious convictions. Yet there are not wanting facts to show that something may be done without the influence of religion ... A missionary who is really earnest, and has the art (and the heart) to gain the affections of his flock, may do much in eradicating barbarous customs, and in raising the standard of morality and happiness. But he may do all this quite independently of any form of sectarian theological teaching, and it is a mistake too often made to impute all to the particular doctrines inculcated, and little or nothing to the other influences we have mentioned. We believe that the purest morality, the most perfect justice, the highest civilization, and the qualities that tend to render men good, and wise, and happy, may be inculcated quite independently of fixed forms or dogmas, and perhaps even better for the want of them. The savage may be certainly made amenable to the influence of the affections, and will probably submit the more readily to the teaching of one who does not, at the very outset, attack his rude superstitions. These will assuredly die out of themselves, when knowledge and morality and civilization have gained some influence over him; and

> he will then be in a condition to receive and assimilate whatever there is of goodness and truth in the religion of his teacher.
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> Unfortunately, the practices of European settlers are too often so diametrically opposed to the precepts of Christianity, and so deficient in humanity, justice, and charity, that the poor savage must be sorely puzzled to understand why this new faith, which is to do him so much good, should have had so little effect on his teacher's own countrymen. The white men in our colonies are too frequently the true savages, and require to be taught and Christianized quite as much as the natives ... The savage may well wonder at our inconsistency in pressing upon him a religion which has so signally failed to improve our own moral character, as he too acutely feels in the treatment he receives from Christians. It seems desirable, therefore, that our Missionary Societies should endeavour to exhibit to their proposed converts some more favourable specimens of the effect of their teaching. It might be well to devote a portion of the funds of such societies to the establishment of model communities, adapted to show the benefits of the civilization we wish to introduce, and to serve as a visible illustration of the effects of Christianity on its professors. The general practice of Christian virtues by the Europeans around them would, we feel assured, be a most powerful instrument for the general improvement of savage races, and is, perhaps, the only mode of teaching that would produce a real and lasting effect.[10]

In Smith (2003–, Chapter 5), I write: "Wallace evidently has now reached the point of cogitating on exactly what it will take—what kinds of 'model institutions'—to deliver forms of instruction serving what might be termed 'believable example'; *i.e.*, that will provide a foundation for informed belief. Clearly, inculcation was not enough; further, and building on the thoughts presented in the 'Public Responsibility and the Ballot' letter earlier, neither were the opinions of the masses, which could not be depended on to 'increase the average intelligence or morality of the country.' " As Spencer had argued (and Wallace also believed), people should receive what they truly deserve, and this could not generate turns for the better until they bought into a belief system that helped them target decent goals. "How to Civilize Savages" is a powerful allegory for the ages, a look at the dilemma facing the whole of humankind, not savages alone.

At this point, an important new influence entered Wallace's life: spiritualism.

Wallace's Adoption of Spiritualism

The most extensive analyses of Wallace's adoption of spiritualism are by Kottler (1974) and Malinchak (1987).[11] Both investigators explore the matter under the assumption that Wallace did reverse himself on the applicability of natural selection to humankind and that this requires an explanation, possibly related to his spiritualism. Neither, however, dug far enough to come to any firm conclusions regarding the three outstanding questions surrounding his adoption of the belief: (1) When did Wallace first begin to investigate the subject? (2) At what point did he

become a full believer? and most importantly, (3) What was his main reason for adopting it? Kottler does, however, thoroughly summarize the history of the spiritualism movement, survey Wallace's various "field" studies of spiritualistic phenomena, and describe how his efforts were received within the scientific community. Further, he reviews and discusses the various ways that spiritualism might have interacted with other factors to produce the alleged change of mind. He concludes: "I tend to believe Wallace was persuaded by his scientific as well as spiritual arguments against natural selection. Yet I remain convinced that Wallace's belief in the reality of psychical phenomena and their spiritualist interpretation created the initial doubts about natural selection and stimulated his rethinking, on grounds of utility, man's unique features" (Kottler 1974, 192).

Malinchak, meanwhile, resists coming to a full conclusion on the matter, merely offering the loaded observation that "It was only after Wallace engaged in his extensive studies in spiritualism and became convinced of the genuineness of spiritualistic phenomena that he began to inject quasi-religious notions of the guidance of higher intelligences in the development of the human mind into his scientific arguments" (Malinchak 1987, 109). At the same time, however, she sees no link between his conversion to spiritualism and his existing views on natural selection, instead referring the former to causes rooted in his earlier experiences with the supernatural, and a range of ambient social and intellectual trends.

But all of this begs the question of *whether* there was a reversal of position that needs explaining on the basis of his adoption of spiritualism—or any other factor—to begin with. I have just shown that in the year preceding the middle of 1865 Wallace had gone public with an escalating discussion on those elements of societal engagement that might lead to an elevation of social purpose—that is, to societal evolution. This sustained dialogue was clearly the central thing on his mind at that point. His published scientific work from this same period, April 1864 to June 1865, is rather uninteresting, consisting only of straightforward systematic treatments of Malay Archipelago birds (S102 1864, S112 1865) and land shells (S109 1865). It remains to be shown how his subsequent activities reveal a continuation of purpose, and to accomplish this we begin by returning to the three questions stated above, regarding his adoption of spiritualism.

In Smith (2003–) I provide a considerably more extensive review of available sources regarding Wallace's initial dealings with spiritualism than had previously been available. This establishes, seemingly once and for all, the following chronology. In *My Life* (S729 1905) he claims to have been aware of the spiritualism movement even while in the East (and I have confirmed that at least two publications he is known to have received during that period, *Athenaeum* and *Literary Gazette*, carried stories on the subject). There is some conflicting evidence as to how much, if any, attention he gave to the subject in the three-year period after his return to England in 1862, but the best available information leads me to think (as

Kottler also concluded) that he only began to take the matter seriously around June of 1865.

Malinchak (1987) suggests that this date might have reflected a simple accident of work schedule; specifically, that before that he had been too occupied with his collections to put his attention elsewhere. Slotten (2004) suggests the timing to be fallout from Wallace's jilting by his fiancee. Neither of these theories should be taken seriously. Malinchak is correct that for the time being his systematics work ceased, but after an interlude of about a year it recommenced, with years of as much publication activity as before (see Smith 2003–, Chapter 5). Chapter 10 of Slotten's (2004) otherwise excellent biography, concerning in part Wallace's spiritualism, is marred by omissions and errors in chronology and bibliography. His conclusion that "An emotional crisis, not an intellectual or a spiritual one, drove him into the embracing arms of mediums" is absurd—not only for the reasons being explained in this chapter (which Slotten does not even entertain), but for at least four additional reasons discussed in a note at the end of Chapter 5 of my "Alfred Russel Wallace: Evolution of an Evolutionist" (Smith 2003–).

However, Slotten may be correct in suggesting that the likely *immediate* catalyst for Wallace's investigations was his sister Fanny, who was a believer at that point, and with whom Wallace had been sharing a house around that time. Once the stage was set—and by this I mean the intellectual stage, as evidenced by his literary preoccupations of the previous year—it probably would not have required much convincing from someone so close to him to at least have a look.

Whatever the reason for Wallace's taking interest exactly when he did, the signal result was a nearly complete captivation of his attention for a full year. The unequivocal evidence of this is not only a nearly full and immediate cessation in his published output, but a nearly equally complete withdrawal from his professional involvements. The only substantial work he published between June 1865 and June 1866 was a systematic treatment of Malay Archipelago pigeons (S114), which appeared in print in *Ibis* in October 1865 (and could have been finished some months earlier). Between that date and the middle of May 1866, nothing whatsoever from his pen appeared in print—the longest unaccounted-for unproductive period in his entire career. Even more interestingly, apart from some short comments (S113a) offered at a 4 July 1865 meeting of the Ethnological Society, there is no record of his participating, either as presenter or commenter, in any other professional meeting over the same period. By contrast, in the preceding twelve-month period, twelve such commitments are known, and in the following twelve-month period, fourteen. Further, although he did attend the annual British Association for the Advancement of Science meetings in the late summer of 1865 (and took part in some committee work while there), he presented no paper that year—whereas in the two years preceding and following he presented a total of seven papers (and at least one each year). Clearly, for a full year he had taken a major "time out."[12]

While it is now apparent what was going on, the progression of Wallace's early engagement of spiritualism is more complicated than previous writers have

recognized. Actually, three rather distinct and escalating levels in his interest can be identified, stages that might be termed his "Wallace the Seeker," "Wallace the Promoter," and "Wallace the Believer" periods. During the first of these, lasting from roughly June 1865 to December 1865, Wallace sought confirmation that his new object of attention was both demonstrably real, and underlain by a body of philosophy consistent with his "no merit to uninformed belief" theory of the basis of societal change. Many writers, including Kottler and Malinchak, have reviewed his seance attendance activities during this early period, but no attention has been given to the second matter, which ended up being more crucial: he might have been able to excuse (and apparently *did*) not encountering convincing physical manifestations at first, but this wouldn't have mattered had he quickly reached the conclusion that the philosophy of spiritualism was bereft of any logic relatable to the "refinement of informed belief" matter. Exhaustive literature reviews of newly dealt-with subjects were regular course for Wallace (see S741 1903, 176; Marchant 1975 [1916], 353, 363–64; S729 1905a, 2:100–01, 231, 233, 243, 350–51, 353), and in this instance his behavior was no different: he wanted to gain insight into spiritualism's history and objectives (S729 2:279–80; Malinchak 1987, 80–82). His own first writing on spiritualism, "The Scientific Aspect of the Supernatural" (S118 1866), straightforwardly attests to this, as it is nothing if not a detailed review of the subject's philosophy and literature.

By the middle of the fall of 1865 Wallace had attended a significant number of seances, but still hadn't witnessed any fully convincing phenomena. Further, he had thus far not been able to control the proceedings by having them staged in his own home. Then the perhaps single most important event in Wallace's post-Malay Archipelago life took place. The 1 December 1870 issue (Volume 1, Number 1) of the obscure newsletter *The Spiritual News* describes discussion that followed Wallace's first public address on spiritualism, "An Answer to the Arguments of Hume, Lecky, and Others, Against Miracles" (S174), presented during a soirée held late that same year. The host of the soirée, an entrepreneur and leading spiritualist named Benjamin Coleman, is quoted in the article as saying that "it was just five years ago" that he (Coleman) launched the series, and that at "the very first meeting held in that room in connection with Spiritualism, Mr. Wallace was present as a strong disbeliever." The meeting in question took place on 6 November 1865, so at that point it would appear Wallace was still in "Seeker" mode.

Wallace likely had reasons for attending the event that extended beyond its inaugural nature: it featured the first in a new series of lectures by the spiritualist sage Emma Hardinge (1823–99; Fig. 32). Hardinge, an Englishwoman who had spent many years in America (initially as an actress), was by 1865 one of the Movement's leading lights—a powerful communicator who spoke eloquently and extemporaneously, on subjects introduced from the audience. Portions of her 6 November 1865 lecture were later published in *The Spiritual Magazine*,[13] including such remarks as:

> In pointing to the analogy that exists between the great physical and spiritual laws of Earth, together with the modes in which they act, I have sought to shew you that all that man has called the supernatural, and classes as miracle, is but the out-working of an harmonious plan, which the mighty Spirit reveals through eternal laws; and the Spiritualism at which you marvel, and the Christianity before which you bow, are but parts of the same divine law and alternating life of order, which ever sees the day spring out of the darkest night ...
>
> ... By Chemistry, man learns through scientific processes, to dissolve and re-compose in changed form, every existing atom. Time, instruments, and material processes alone are asked for the chemistry of science to accomplish these results. To the Spirit (whose knowledge comprehends all laws revealed to man) such chemistry is possible, and truly is achieved, without the lapse of time, or the aid of human science yet known as such to Man ...
>
> ... Translated through the solemn utterance of dim antiquity all this is "Miracle"—in simple modern science, it is "Chemistry," requiring only knowledge to effect these changes; in modern spiritualistic phrase 'tis mediumship, or chemistry employing subtler forces to effect in yet more rapid time and simpler modes than man's, the self-same changes which man can make by science. To-day you listen to the tap, tap, of the electric telegraph of the soul; you translate into sentences that strange and grotesque form of telegraphy; you behold inscribed on the blank page the name of some beloved one written with no mortal hand; you feel the baptism of the falling water, you know not from whence; and the fragrance of flowers not gathered by mortal power appeals to your startled senses. You call this Spiritualism; and what is this but the chemistry of the spirit? ... (Anon. 1865, 531–2).

The apparent pivotal influence of Hardinge on Wallace (see discussion below, and in n. 14) has not previously been appreciated (none of the four most recent Wallace biographers—Raby 2001; Shermer 2002; Fichman 2004; or Slotten 2004—even mention her in this context). For Wallace, who was still trying to come to an understanding of the place of the higher sympathies in natural context, words such as those quoted above must have been revelatory. Hardinge gave several more lectures over the next six months, and their summary effect, when combined with the results of his literature review, was to turn him—not into a full believer—but into a sympathizer who now felt that the subject was worthy of investigation by the scientific research community. Still eschewing any professional commitments, he began to compose a monographic essay that pled for such attention. This was "The Scientific Aspect of the Supernatural" (S118 1866).

Slotten (2004, 245) places the publication of this work in late 1866, apparently unaware that it was actually ready for publication by no later than midsummer, and released in weekly installments shortly thereafter in the secularist periodical *The English Leader.* A note on page 9 of *The English Leader* issue of 21 July 1866 reports that they have received Wallace's manuscript and are ready to give it

Figure 32 Portrait of the spiritualist speaker Emma Hardinge (Britten).
The frontispiece to Emma Hardinge's book *Modern American Spiritualism* (1870).
Out of copyright.

"immediate attention." Probably not coincidentally the last lecture in Emma Hardinge's tour had been set for 24 June 1866 (per mention in the *National Reformer* issue of 1 July 1866)—that is, just in time for Wallace to hear or read before finishing up his manuscript. Concerning "The Scientific Aspect of the Supernatural" I have written:

> The orientation of this work is revealing. Conscious that he has not yet obtained satisfactorily definitive physical evidence, Wallace concentrates on literature review and producing a philosophical argument for investigating the phenomena. He begins by noting that our senses are limited, and that it is only through the accumulation of knowledge that we have elevated our understanding of physical processes above assumptions of the miraculous. He then argues that the so-called miracles of the past and present most likely represent non-miraculous aspects of natural process that we simply do not yet understand. Next he moves on to a consideration of cryptic forces in nature, and then to some of the recorded evidence of various spiritualistic phenomena. Finally, he treats the theory and moral teachings of spiritualism, drawing very heavily from the writings of Emma Hardinge to complete his review.[14] Entirely missing from the treatment are descriptions of any of his own investigations of the phenomena—which, of course, had so far only proved mildly corroborative. Nevertheless, he had done a passably good job of reducing a large and esoteric literature to a readable declaration of its legitimacy for study (Smith 2003–, Chapter 5).

Wallace's greater purpose at the point he submitted the essay for publication is revealed in the following excerpt from the work:

> Now here again we have a striking supplement to the doctrines of modern science. The organic world has been carried on to a high state of development, and has been ever kept in harmony with the forces of external nature, by the grand law of "survival of the fittest" acting upon ever varying organisations. In the spiritual world, the law of the "progression of the fittest" takes its place, and carries on in unbroken continuity that development of the human mind which has been commenced here (S118, 49–50).

From this passage several things seem evident. First and foremost, Wallace recognizes as "laws" (*i.e.*, not as theories or processes) both the "survival of the fittest" and the "progression of the fittest." He also recognizes them as applicable to different domains, yet connected in "unbroken continuity." Further, he speaks in terms of a "supplement," and not an "alteration," "revision," etc., to the "doctrines of modern science." Last and perhaps most interestingly, this turns out to be the first time in Wallace's published writings that he uses the term "survival of the fittest" (Smith 2008). (Some months later he first uses [at least in its modern sense] the term "evolution" in a letter on mimicry published in *Athenaeum* [S123 1866], just after the issuance of the pamphlet version of *The Scientific Aspect of the Supernatural* [see below]). Note in this context the famous letter in which Wallace suggested to Darwin that he adopt the term "survival of the fittest" as a way of conveying the essence of natural selection—it is dated 2 July 1866 (Marchant 1975 [1916], 140–43); that is to say, just as Wallace was readying his spiritualism essay for publication, and undoubtedly reflecting upon the implications of the "unbroken continuity" between the "progression of the fittest" and material nature.

Meanwhile, Wallace was beginning to resume his professional activities. From June 1866 on, and for the next few years, his rates of contribution to scientific meetings and publication of literary works closely approximated his pre-June 1865 efforts. Among the first stops was a short speech to the Anthropological Section of the annual British Association for the Advancement of Science meetings. Delivered on 23 August 1866, just as "The Scientific Aspect of the Supernatural" was being serialized in print, it features the following interesting admonition:

> The anthropologist must ever bear in mind that, as the object of his study is *man*, nothing pertaining to or characteristic of man can be unworthy of his attention. It will be only after we have brought together and arranged all the facts and principles which have been established by the various special studies to which I have alluded, that we shall be in a condition to determine the particular lines of investigation most needed to complete our knowledge of man, and may hope ultimately to arrive at some definite conclusions on the great problems which must interest us all—the questions of the origin, the nature, and the destiny of the human race. I would beg you to recollect also that *here* we must treat all these problems as purely questions of science, to be decided solely by facts and by legitimate deductions from facts. We can accept no conclusions as authoritative that have not been thus established.

> Our sole object is to find out for ourselves what is our true nature ... (S119, 93–94).

Can anyone doubt that Wallace was thinking of his spiritualism studies when he offered up these pointed remarks?

After seven weeks of continuations the final installment of "The Scientific Aspect of the Supernatural" was printed in *The English Leader* issue of 29 September 1866. Sometime during the fall, however, Wallace decided that the serialized format was not up to the goal of getting his message out, and arranged to have a pamphlet version released. Kottler (1974) and others (including Wallace himself, in his autobiography) make much of the fuss its distribution caused among his friends and acquaintances, but this story, amusing as it is, is less informative than the surrounding chronology of events. It was undoubtedly printed after 29 September; apart from this being likely *a priori*, the pamphlet version is based on the same typesetting as the magazine layout, but contains a few notes and edits (and an introduction) not present in the latter. The real question, however, is how *late* it might have been printed, and in turn what that might imply. In November of 1866, Wallace finally found a medium, Miss Nicholl (later Mrs Guppy), a friend of the family, who both produced convincing phenomena, and agreed to hold sessions, for free, in Wallace's own quarters. Slotten (2004) places Wallace's production and distribution of the pamphlet at a date significantly later than this event, but this is most unlikely. The very latest it could have been sent to the printers was early to mid-November, since a cover letter dated 22 November that presented a finished copy of the work to Thomas Huxley exists (Marchant 1975 [1916], 417–18). Consider Wallace's words in the work describing his purpose for producing it: "... Let us now return to the consideration of the probable nature and powers of those preter-human intelligences whose possible existence only it is my object to maintain ..." (S118, 7–8). This is no more than a plea—that study be given to a matter worthy of attention—and not the words of a full convert. As of its release Wallace was still in his "Promoter" stage; had the confirming manifestations occurred well before the date of release of the pamphlet (whatever date it was printed), he might have stopped its distribution, or at least added further commentary first—as he actually *did* later when he revised the essay for inclusion in *On Miracles and Modern Spiritualism* (S717 1875).[15] At the very least, as of 22 November he was still feeling that his *a priori* arguments were strong enough to merit a continued push—which, beginning at that time, included cover letter invitations to colleagues to take part in his family's now weekly sessions with Miss Nicholl.

Wallace's seances with Miss Nicholl in December 1866 and early 1867 produced some very remarkable manifestations (S126 1867, S132 1867, S137 1867), all at his home, and under Wallace's supervision. During this period he inevitably abandoned his "Promoter" role to turn "Believer." Also, inevitably, he begins to show evidence of this new influence in his writings. In a letter to the *Anthropological*

Review published in January 1867 he writes: "the principles of Mr. Darwin's *Origin of Species*, if applied to man with such modifications as are required by the great development and vast importance of his intellectual and moral rather than his mere animal nature, leads to the apparently paradoxical result that he is tending to become again as his progenitors once undoubtedly must have been, 'a single homogeneous race' " (S125, 105). What kind of "modifications," one wonders, is he referring to here? Similarly, in the unlikely setting of a monographic review of the butterfly family Pieridae presented to the Entomological Society on 18 February 1867, he says: "It is, therefore, no objection to a theory that it does not explain everything, but rather the contrary. A true theory will certainly enable us to understand many of the phenomena of life, but owing to our necessarily imperfect knowledge of past causes and events, there must always remain complicated knots that we cannot disentangle, and dark mysteries on which we can throw but a straggling ray of light" (S127, 309). This sounds very much like stage-setting to me.[16]

Evolution, à la Wallace

As 1867 proceeded and he witnessed further convincing seance phenomena, Wallace, being Wallace, surely began to think about possible venues for expressing himself fully on his new synthesis. The first opportunity to do so, at least in part, came when he published a review of the Duke of Argyll's anti-Darwinian book *The Reign of Law* in the fall of that year (S140). In it he writes:

> ... why should we measure the creative mind by our own? Why should we suppose the machine too complicated to have been designed by the Creator so complete, that it would necessarily work out harmonious results? The theory of "continual interference" is a limitation of the Creator's power. It assumes that he could not work by pure law in the organic as he has done in the inorganic world; it assumes that he could not foresee the consequences of the laws of matter and mind combined—that results would continually arise which are contrary to what is best, and that he has to change what would otherwise be the course of nature in order to produce that beauty and variety and harmony, which even we, with our limited intellects, can conceive to be the result of self-adjustment in a universe governed by unvarying law. If we could not conceive the world of nature to be self-adjusting and capable of endless development, it would even then be an unworthy idea of a Creator to impute the incapacity of our minds to him; but when many human minds can conceive and can even trace out in detail some of the adaptations in nature as the necessary results of unvarying law, it seems strange that in the interests of religion any one should seek to prove that the System of Nature instead of being above, is far below our highest conceptions of it. I, for one, cannot believe that the world would come to chaos if left to Law alone. I cannot believe that there is in it no inherent power of developing beauty or variety, and that the direct action of the Deity is

> required to produce each spot or streak on every insect, each detail of structure in every one of the millions of organisms that live or have lived upon the earth. For it is impossible to draw a line. If any modifications of structure could be the result of law, why not all? If some self-adaptations could arise, why not others? If any varieties of colour, why not all the variety we see? No attempt is made to explain this except by reference to the fact that "purpose" and "contrivance" are everywhere visible, and by the illogical deduction that they could only have arisen from the direct action of some mind, because the direct action of our minds produces similar "contrivances;" but it is forgotten that adaptation, however produced, must have the appearance of design. The channel of a river looks as if made *for* the river although it is made *by* it; the fine layers and beds in a deposit of sand often look as if they had been sorted and sifted and levelled designedly; the sides and angles of a crystal exactly resemble similar forms designed by man; but we do not therefore conclude that these effects have, in each individual case, required the directing action of a creative mind, or see any difficulty in their being produced by natural Law (S140, 479–80).

It is not Wallace's object here to suggest that humankind is "above" natural law, but neither does he imply that river channels are the only kinds of things that display an "appearance of design." More to the point, a kind of "design" is envisioned that looks not to an anthropomorphic God, but instead to laws-based final causes. Actually, the review was an extraordinary accomplishment, managing simultaneously to again criticize the "continual interference" model of Creationists, resuscitate his "geographical Bauplan" model from the 1840s and 1850s (Smith 2003–), lay the groundwork for the final causes-flavored evolutionary cosmology evidenced later in *Man's Place in the Universe* (S728 1903) and *The World of Life* (S732 1910), and bring to the table some initial considerations on the workings of mind and spirit.

Any desire to expand further on this kind of thinking was thwarted for the time being when he realized that the time had finally come to put out a journal of his Eastern travels. Most of 1868 was consumed by the preparation of what would become *The Malay Archipelago* (S715 1869), but that year also produced some foreshadowing of his eventual split with Darwin over human evolution. Shortly before *Malay Archipelago* was finished, Wallace attended the annual meetings of the British Association for the Advancement of Science. There he sat in on a lecture by the Revd. F. O. Morris "On the Difficulties of Darwinism." After its conclusion he was cited as remarking: "With regard to the moral bearing of the question as to whether the moral and intellectual faculties could be developed by natural selection, that was a subject on which Mr. Darwin had not given an opinion. He (Mr. Wallace) did not believe that Mr. Darwin's theory would entirely explain those mental phenomena" (S142a 1868). It was the first public expression of his break with Darwin on the causes of evolution of the higher attributes of humankind—a break founded not on a reduction of his thoughts on natural

selection, but instead on a wedding of the kind of thinking expressed in "Creation by Law" with his spiritualistic model of the "progression of the fittest."

Obviously, Wallace was now ready to square off against Darwin's views on the origin of the higher human faculties. The immediate problem became a venue within which he could fully express such thoughts, in writing.

For a while no such opportunity presented itself, but in the meantime a public discussion unfolded that must have left Wallace straining at the leash. An article entitled "On the Failure of 'Natural Selection' in the Case of Man" was published anonymously in *Fraser's Magazine* in September 1868, creating a considerable stir. Penned by William R. Greg (a writer on social issues who would become a key figure in the eugenics movement), it argued that in our society protection of the weak—the poor and the inferior in mind or body—had left natural selection an ineffectual agent for improvement. Greg uses Wallace's own reasoning as presented in his 1864 paper to the Anthropological Society (S93) as the basis for his argument, pointing to Wallace's observation that in humans selection had become refocused at the level of the mind.

Early on, reaction to the paper was generally favorable, but before long opinion turned vehemently critical. A few weeks later in *The Spectator* an anonymous writer opined that Greg's argument was flawed, because:

> ... The plan of God seems to be to ennoble the higher part of His universe at least, not so much by eliminating imperfection, as by multiplying graces and virtues. He balances the new evils peculiar to human life by infinitely greater weights in the scale of the good which is also peculiar to human life. "Natural selection" has its place and its function, doubtless, even amongst us. But over it, and high above it, is growing up a principle of supernatural selection, by our free participation in which we can alone become brethren of Christ and children of God (Anon. 1868, 1155).

Neither this position nor Greg's original manipulation of his thinking could have made Wallace do more than roll his eyes, if for contrasting reasons. In January 1869, however, another kind of evaluation of Greg's reasoning appeared, this time in a publication noted for its liberal views, the *Quarterly Journal of Science*. This writer concluded, again anonymously, that Greg and others had missed the point: selection was still going on, but its nature was changing as humankind evolved:

> ... So with the communities of civilized men—the struggle is between one society and another, whatever may be the bond uniting such society: and in the far distant future we can see no end to the possible combinations or societies which may arise amongst men, and by their emulation tend to his development. Moral qualities, amongst the others thus developed in the individual necessarily arise in societies of men, and are naturally selected, being a source of strength to the community which has them most developed: and there is no excuse for speaking of a failure of Darwin's law or of

> "supernatural" selection. We must remember what Alfred Wallace has insisted upon most rightly—that in man, development does not affect so much the bodily as the mental characteristics; the brain in him has become much more sensitive to the operation of selection than the body, and hence is almost its sole subject. At the same time it is clear that the struggle between man and man is going on to a much larger extent than the writer in "Fraser" allowed. The rich fool dissipates his fortune and becomes poor; the large-brained artizan does frequently rise to wealth and position; and it is a well-known law that the poor do not succeed in rearing so large a contribution to the new generation as do the richer. Hence we have a perpetual survival of the fittest. In the most barbarous conditions of mankind, the struggle is almost entirely between individuals: in proportion as civilization has increased among men, it is easy to trace the transference of a great part of the struggle little by little from individuals to tribes, nations, leagues, guilds, corporations, societies, and other such combinations, and accompanying this transference has been undeniably the development of the moral qualities and of social virtues (Anon. 1869).

This was the kind of thinking, relating selection to the societal role of the "higher attributes," that was bound to attract Wallace's favor, and it did: in a letter to Darwin dated 20 January 1869 he exclaims: "Have you seen in the last number of the *Quarterly Journal of Science* the excellent remarks on *Fraser's* article on Natural Selection failing as to Man? In one page it gets to the heart of the question, and I have written to the Editor to ask who the author is." A few lines later he adds: "Perhaps you have heard that I have undertaken to write an article for the *Quarterly* (!) on the same subject [*i.e.*, Lyell's *Principles of Geology*], to make up for that on 'Modern Geology' last year not mentioning Sir C. Lyell" (Marchant 1975 [1916], 190–91).

This was the opportunity Wallace had been waiting for. Since at least his writing of "The Scientific Aspect of the Supernatural" (S118) in the first half of 1866 the essential differences between "natural selection" and "evolution" had become more apparent to him, resulting in, as mentioned earlier, his relation of the concepts "survival of the fittest" to "progression of the fittest" in that work, and his concurrent letter recommending the use of the former term to Darwin. In the Lyell review he was given license to provide a thorough recap of Lyellian uniformitarianism, embed Darwinian principles within its context, and, once this foundation was established, introduce his new thoughts relating to the more embracing subject of evolution in general. Lyell's adoption of Darwinism, supposedly "the great distinguishing feature of this [new] edition" [of *Principles of Geology*], is only first dealt with two-thirds of the way through the essay—a bit strange, unless it is actually part of Wallace's agenda to stress that even the most thoroughly worked-out ideas may be subject to alteration or adjustment. After ten further pages recounting the history of evolutionary ideas and the various kinds of evidence for Darwinian natural selection in particular, he finally arrives at the

culmination of his discussion: seven paragraphs explaining in brief why, after supporting all that has preceded, he yet feels that "more recondite" forces act to shape the moral and intellectual evolution of humankind: "Neither natural selection nor the more general theory of evolution can give any account whatever of the origin of sensational or conscious life ... the moral and higher intellectual nature of man is as unique a phenomenon as was conscious life on its first appearance in the world" (S146 1869, 391).

It is sometimes forgotten that the *Quarterly Review* article actually appeared several weeks after the issuance of *The Malay Archipelago* (S715), some of the last words of which are:

> ... We most of us believe that we, the higher races, have progressed and are progressing. If so, there must be some state of perfection, some ultimate goal, which we may never reach, but to which all true progress must bring us nearer. What is this ideally perfect social state towards which mankind ever has been, and still is tending? Our best thinkers maintain that it is a state of individual freedom and self-government, rendered possible by the equal development and just balance of the intellectual, moral, and physical parts of our nature,—a state in which we shall each be so perfectly fitted for a social existence, by knowing what is right, and at the same time feeling an irresistible impulse to do what we know to be right, that all laws and all punishments shall be unnecessary. In such a state every man would have a sufficiently well-balanced intellectual organization to understand the moral law in all its details, and would require no other motive but the free impulses of his own nature to obey that law ...
>
> ... although we have progressed vastly beyond the savage state in intellectual achievements, we have not advanced equally in morals. It is true that among those classes who have no wants that cannot be easily supplied, and among whom public opinion has great influence, the rights of others are fully respected. It is true, also, that we have vastly extended the sphere of those rights, and include within them all the brotherhood of man. But it is not too much to say, that the mass of our populations have not at all advanced beyond the savage code of morals, and have in many cases sunk below it. A deficient morality is the great blot of modern civilization, and the greatest hindrance to true progress ...
>
> During the last century, and especially in the last thirty years, our intellectual and material advancement has been too quickly achieved for us to reap the full benefit of it. Our mastery over the forces of nature has led to a rapid growth of population, and a vast accumulation of wealth; but these have brought with them such an amount of poverty and crime, and have fostered the growth of so much sordid feeling and so many fierce passions, that it may well be questioned, whether the mental and moral status of our population has not on the average been lowered, and whether the evil has not overbalanced the good ...
>
> This is not a result to boast of, or to be satisfied with; and, until there is a more general recognition of this failure of our civilization—resulting mainly

> from our neglect to train and develop more thoroughly the sympathetic feelings and moral faculties of our nature, and to allow them a larger share of influence in our legislation, our commerce, and our whole social organization—we shall never, as regards the whole community, attain to any real or important superiority over the better class of savages ... (S715 1891, 455–57).

This epilogue is exactly a continuation of the line of thought expressed in the 1864–65 works on "informed belief" discussed earlier. It perfectly complements the last seven paragraphs of the *Quarterly Review* article, which focus on the relation of "higher influences" to natural selection on individual human beings, as opposed to socially-mediated moral change. Here, in *The Malay Archipelago*, Wallace again reflects on what constitutes the "perfect social state" and how informed belief can contribute to its development; the main difference between it and his pre-1866 studies is that he now feels he recognizes a solution to the problem. In Smith (2003–, Chapter 5) I summarize:

> Wallace had by now come to the conclusion that the "Spirit Realm" described by spiritualist prophets such as Stainton Moses constituted a *natural* domain within which the trace of organic evolution was continued—in the same way the latter continued, was intimately linked with, and depended on, the inertia of continuing forms of inorganic evolution. The critical connection for Wallace would have been his recognition that, given the supposed nature of the spirit realm, the higher faculties of man did in fact have utility. But this was not a function contributing only to biological survival, and thus devolving from causes dictated by conditions of the immediate physical environment. Instead, the refinement of the higher faculties made possible a continuing elevation of function after the biological death of the individual within a purely psychic (or "will-expressed") domain of organization. Higher spiritual development meant a greater capacity for identifying (and setting into action) new causal forces contributing to the overall evolutionary progression (much as biological evolution had secondarily modified the evolution of physical systems such as the atmosphere).

Perhaps the most succinct statement of Wallace's social vision appears in his 1892 essay "Human Progress: Past and Future":

> ... I have endeavored to show, in the present article, that we are not limited to the depressing alternatives above set forth,—that education has the greatest value for the improvement of mankind,—and that selection of the fittest may be ensured by power and more effective agencies than the destruction of the weak and helpless. From a consideration of historical facts bearing upon the origin and development of human faculty I have shown reason for believing that it is only by a true and perfect system of education and the public opinion which such a system will create, that the special mode of selection on which the future of humanity depends can be brought into general action. Education and environment, which have so often stunted and debased human nature instead of improving it, are powerless to trans-

> mit by heredity either their good or their evil effects; and for this limitation of their power we ought to be thankful. It follows, that when we are wise enough to reform our social economy and give to our youth a truer, a broader, and a more philosophical training, we shall find their minds free from any hereditary taint derived from the evil customs and mistaken teaching of the past, and ready to respond at once to that higher ideal of life and of the responsibilities of marriage which will, indirectly, become the greatest factor in human progress (S445, 158–59).

In short, so long as we keep in mind that it is through the application of "intelligent conviction" that weaknesses can be eliminated, we and our derivative social systems can continue to evolve productively.

Change, Or No Change?

The interpretation of Wallace's motives and activities just given constitutes what I have termed the "no change of mind" theory of his personal evolution of thought. It should be noted that in applying this name I have been motivated, primarily, by trying to contrast the new understanding with the old approach based largely on the (I feel misguided) assumption that Wallace's 1858 model of natural selection was intended to cover all aspects of human evolution, just as it treated change in plants and nonhuman animals. Neither I nor Martin Fichman in his writings on the subject (Fichman 2001, 2004) have ever meant to imply that Wallace underwent *no* changes of position whatsoever during this period, just that there was never a *reversal* involved—at least, on his thoughts on man. It remains to take a quick look at some of the evidence that has been set forth to argue that there was.

Some supporters of the "change of mind" hypothesis (as reviewed by Kottler 1974 and Malinchak 1987) would have it that when in 1865 Wallace became acquainted with spiritualism, he found in this belief a way to reverse himself on his until-then materialist approach to natural selection. This scenario faces some serious difficulties, both in terms of its over-reliance on negative evidence, and its avoidance of certain clues to the contrary. In the first place, there is the central and questionable assumption that he held a position on which he could backtrack to begin with: as indicated earlier, there is nothing either in the Ternate essay itself or his later appraisals of it that suggests, even obliquely, that at that point he had embraced an understanding of natural selection meant to pertain to the higher human attributes.

Later, moreover, in 1875, Wallace actually *himself* directly dismissed the idea that the origin of his divergence from the views of Darwin on natural selection was due to his acceptance of spiritualism. In the Preface to the first edition of *On Miracles and Modern Spiritualism*, he seems pretty clear on this point:

> ... I am informed that, in an article entitled "Englische Kritiker und Anti-Kritiker des Darwinismus," published in 1861 [an error for 1871], he [Anton Dohrn] has put forth the opinion that Spiritualism and Natural Selection are incompatible, and that my divergence from the views of Mr. Darwin arises from my belief in Spiritualism. He also supposes that in accepting the spiritual doctrines I have been to some extent influenced by clerical and religious prejudices. As Mr. Dohrn's views may be those of other scientific friends, I may perhaps be excused for entering into some personal details in reply.
>
> From the age of fourteen ... Up to the time when I first became acquainted with the facts of Spiritualism, I was a confirmed philosophical sceptic, rejoicing in the works of Voltaire, Strauss, and Carl Vogt, and an ardent admirer (as I still am) of Herbert Spencer. I was so thorough and confirmed a materialist that I could not at that time find a place in my mind for the conception of spiritual existence, or for any other agencies in the universe than matter and force. Facts, however, are stubborn things. My curiosity was at first excited by some slight but inexplicable phenomena occurring in a friend's family, and my desire for knowledge and love of truth forced me to continue the inquiry. The facts became more and more assured, more and more varied, more and more removed from anything that modern science taught or modern philosophy speculated on. The facts beat me. They compelled me to accept them *as facts* long before I could accept the spiritual explanation of them; there was at that time "no place in my fabric of thought into which it could be fitted." By slow degrees a place was made; but it was made, not by any preconceived or theoretical opinions, but by the continuous action of fact after fact, which could not be got rid of in any other way. So much for Mr. Anton Dohrn's theory of the causes which led me to accept Spiritualism. Let us now consider the statement as to its incompatibility with Natural Selection.

He goes on to describe the "natural" basis of his study:

> Having, as above indicated, been led, by a strict induction from facts, to a belief—1stly, In the existence of a number of preterhuman intelligences of various grades and, 2ndly, That some of these intelligences, although usually invisible and intangible to us, can and do act on matter, and do influence our minds,—I am surely following a strictly logical and scientific course in seeing how far this doctrine will enable us to account for some of those residual phenomena which Natural Selection alone will not explain. In the 10th chapter [S165] of my *Contributions to the Theory of Natural Selection* I have pointed out what I consider to be some of those residual phenomena; and I have suggested that they may be due to the action of some of the various intelligences above referred to. This view was, however, put forward with hesitation, and I myself suggested difficulties in the way of its acceptance; but I maintained, and still maintain, that it is one which is logically tenable, and is in no way inconsistent with a thorough acceptance of the grand doctrine of Evolution, through Natural Selection, although implying (as indeed many of the chief supporters of that doctrine admit) that it is not

> the all-powerful, all-sufficient, and only cause of the development of organic forms (S717, 1901, vi–viii).[17]

Note in particular the words "... it is one which is logically tenable, and is in no way inconsistent with a thorough acceptance of the grand doctrine of Evolution ...", and that he simply feels natural selection "is not the all-powerful, all-sufficient, and only cause of the development of organic forms."

Perhaps more telling, however, are the opening notes to the revision of his "On the Origin of Human Races ..." that appeared in the collection *Contributions to the Theory of Natural Selection*:

> I had intended to have considerably extended this essay, but on attempting it I found that I should probably weaken the effect without adding much to the argument. I have therefore preferred to leave it as it was first written, with the exception of a few ill-considered passages which never fully expressed my meaning (S716 1870, viii).

Wallace deliberately uses the word "extended" rather than "reversed" or "changed" here; moreover, he is apparently concerned that any additions might actually "weaken" the gist of the argument. From this one can only conclude that he considered the original argument fundamentally sound. He eventually did decide to end the collection with an entirely new essay, but this only makes it more difficult to understand why, were he trying to express a "change of mind," he would have decided to leave this essay more or less as it was, or, for that matter, included it in the new work at all.

In Chapter 20 Benton quotes the "ill-considered passages" part of this passage, ignoring the most important part of it, the words "... which never fully expressed my meaning." He then attempts to interpret the changes in three particular passages as indicative of a reversal of opinion, but this is beside the point: whichever passages Wallace might be referring to, such text alterations as were made, were made not as a reversal of thought, but because they *apparently did not convey his full thoughts at the time.* This is precisely what Fichman and I are arguing: that in 1863–64 Wallace, temporarily beguiled by the writings of Spencer and distracted from his main course, made an exploratory attempt to describe human evolution in material, "Darwinistic" terms. Wallace himself owned up to such a diversion on two later occasions (S528 1896; S729 1905a, 1:104), discussing his lapse for a time into what he termed "individualist" thinking.

Then there is the famous 18 April 1869 letter from Wallace to Darwin, in which he states:

> I can quite comprehend your feelings with regard to my "unscientific" opinions as to Man, because a few years back I should myself have looked at them as equally wild and uncalled for ... My opinions on the subject have been modified solely by the consideration of a series of remarkable phenomena, physical and mental, which I have now had every opportunity

> of fully testing, and which demonstrate the existence of forces and influences not yet recognised by science (Marchant 1975 [1916], 200).

Taking Wallace at his word and no further, he is only saying here that the now "fully tested" phenomena have led him to a theory which "a few years back" he would have considered "wild and uncalled for" (*i.e.*, in the absence of presentable evidence). The key word here is "modified." Wallace was usually pretty good at wording things to express just what he meant, and this usage here—instead of "reversed," or even "changed," should not be willfully misconstrued. In his 1864 essay on man the main ground gained in 1858 regarding the role of necessary utility in evolutionary change is no more than *held*: no explanation is offered in either essay for how intellect or moral behavior *emerge*. That their *presence* influenced man in ways that would be subjected to the influence of natural selection he still did not doubt (nor did he in 1870, as expressed in the later version of the paper). Wallace had likely recognized for many years that man exhibited certain "above nature" qualities; "The Origin of Human Races ..." was his attempt to describe how these qualities, *once in existence*, could be expected to aid or retard natural selection. As of 1864, however, the manner of their own origin and the connection of this to a forward-moving evolutionary inertia was an issue he still had no handle on and deliberately avoided.

Kottler's (1974) conclusions regarding the changes Wallace made in 1870 to "The Origin of Human Races ..." are rather different:

> By 1870 Wallace was doubtful about natural selection's ability to produce such a future. The mediocre were, after all, the ones who reproduced most prolifically in civilized nations despite the fact that there was an indubitable advance, "on the whole a steady and a permanent one—both in the influence on public opinion of a high morality, and in general desire for intellectual evolution." Wallace was led to invoke an "... inherent progressive power of those glorious qualities which raise us so immeasurably above our fellow animals, and at the same time afford us the surest proof that there are other and higher existences than ourselves, from whom these qualities may have been derived, and towards whom we may be ever tending." The only other relevant change in the essay was Wallace's inclusion of the words "from some unknown cause" to explain the development of man's mind from its near-animal condition to the point at which it began to shield man's body from natural selection. Therefore this essay in its new form was contradictory. It still included passages describing natural selection's accumulation of slight variations in man's intellectual and moral nature leading to ever-higher human types. But in its final paragraph it referred to an inherent progressive power of development in man's intellectual and moral nature handed down from on high. With such an inherent power, man's intellectual and moral nature was independent of external conditions and the "chance" appearance of favorable variations. Therefore it was independent of and inexplicable by natural selection (Kottler 1974, 154).

There are two main problems with this assessment. First, there is again the weak presumption that before 1858—and 1864—Wallace had been treating the evolution of humankind's higher characters in the same basic fashion he had purely biological adaptations such as limb length or jaw strength. More importantly, however, Kottler attributes to Wallace the position that the influences received "from on high" both interrupt the physical operation of natural selection, and supersede it to the extent that their effects on humans are deterministic; *i.e.*, independent of individual free will. As I have argued (Smith 2003–, Chapter 6), "there is no reason to think that Wallace ever thought in these terms at any point in his career." In a late interview, he responded to a question about spiritual influence and continuity: "I do not mean that the control is absolute or that it is of the nature of interference. The control is evidently bound by laws as absolute and irrefragable as those which govern man and his universe. It is certainly dependent on us in a very large measure for its success. I believe we are influenced, not interfered with ..." (S746 1910). In my 2003 work I continue:

> As discussed earlier, it appears that in Wallace's version of natural selection the process operated by seizing upon—amplifying—the advantages accrued by any adaptational array that might pass into existence by the mere chance interaction of those forces underlying variation. Without initial aid "from on high" helping to expose humankind to subtle, unselfish activities "transcending time and space," selection for such activities would never come about. Still, the means by which such "aid" would manifest itself would yet lead to many dead-ends of application as human beings continued to act without a full appreciation of the longer term, larger scale, implications of those acts. Aid "from on high" might indeed be interpreted as a "progressive power" in operation, but it was no surer in its unfolding at any time or place than were the more rotely accumulated adaptations shaped through biological natural selection.

Returning now a final time to Benton's analysis in Chapter 20... Benton makes the best possible case for understanding Wallace's evolution through a "change of mind" approach, yet in the last analysis the only evidence he has to support his position is Wallace's later admission that he temporarily adopted "individualist" ways. But at the same time Wallace never later confessed to believing originally—that is before 1858 and for the several years thereafter—that he held the same views on humans as he did on animals and plants. Nothing he published between "On the Tendency" and "The Origin of Human Races" belies any such views, nor does any (to this point) known correspondence. Meanwhile, writings published by Wallace throughout the rest of his adult life give clear evidence of his belief in the existence and influence of "more recondite" forces, and his activities *c.*1864–69 inescapably demonstrate his interest in their special investigation. And spiritualism itself, it should be pointed out, is an evidence-based belief that embraces (à la Hardinge) Darwinistic understandings as they relate to materialistic biology.

Thus, the preponderance of evidence—and negative evidence—suggests that Wallace's adoption of Spencerian ways *c.*1863–64 was a temporary deviation from a more general, lifelong, track. Until such time as anyone can point to any kind of concrete evidence from the 1858 to 1864 period suggesting "On the Tendency" was meant to extend to all levels of human evolution, it is only reasonable to conclude that the "change of mind" theory represents the weaker of the two alternative interpretations of Wallace's personal evolution of thought.

* * *

Coda

In this 150th anniversary year of the public's introduction to natural selection, we might perhaps do more than just congratulate ourselves on a job well done, or acknowledge our respect for the concept's pioneers, Wallace and Darwin centrally among them, who made the whole trip possible. It would also be well, it seems, to pay some attention to what words such as "natural selection," "evolution," and "Darwinism" actually *mean*—and more importantly, to what they *don't* mean. "Darwinism"—a term championed by Wallace—has come to be understood, roughly, as the idea of "evolution by natural selection," yet despite this implied relationship it is commonly viewed as interchangeable with the idea of "evolution" itself. Now at this oversimplification I must protest (as many others have, including Wallace himself); not only does natural selection have no explicit connection to a *changing* outcome (the main reason why Wallace frequently described natural selection as a law, and as "*accumulating* variations," instead of *creating* them), but neither can we possibly defend the notion that natural selection is the only relevant factor in the unfolding of evolution, whether at the biological level alone, or any other level. Indeed, despite 150 years of study of the matter, the concept has proved largely ineffectual in coming to grips with some of the most central elements of biological change: for example, divergence, speciation, and the *origin* of variation.

To be sure, while these latter events are taking place, natural selection is always there—sometimes as the "ghost in the machine" lurking in the background, and sometimes standing right up front (as, for example, in the shaping of animal coloration patterns, as Caro *et al.* reviewed earlier)—but it would be most inaccurate to say that biological evolution is *exclusively* understandable as its product. I do not deny the basic premises behind the concept; in fact, I think they are absolutely unassailable. Still, validity does not equal universality—as Wallace incessantly argued. In Chapter 18 here I suggested, via Bateson, a scientific framework for contextualizing natural selection within the greater story (as the negative feedback part of the overall process, continually restoring stability and order to the disorder of variation), but even that framework leaves the rest of the process as a great black box whose contents are only in their earliest stages of being revealed.

Unlike Darwin, for Wallace (after 1866, at least—the date of his first usage of the term "survival of the fittest" in S118), the concept was never construed as a surrogate for the more general phenomenon. This is apparent from the vast expanse of his attention, such as we have documented here in this book. It was all evolution to him—the infusion of life energy into the inert, species changes, the emergence of human races, the political struggles within human societies, and last, but certainly not least, the exploratory voyages of spirit. And he was not the least bit shy about saying so, whether in that famous 2 July 1866 letter to Darwin, various other writings contrasting evolution with natural selection (*e.g.*; S165 1870, 333–34; S311 1879; S322 1880, 95–96; S649 1908, 1–12; S726 1898b, Chapter 13) or, perhaps most completely, in his 1900 article "Evolution":

> Evolution, as a general principle, implies that all things in the universe, as we see them, have arisen from other things which preceded them by a process of modification, under the action of those all-pervading but mysterious agencies known to us as "natural forces," or, more generally, "the laws of nature." More particularly the term evolution implies that the process is an "unrolling," or "unfolding"... The point to be especially noted here is, that evolution, even if it is essentially a true and complete theory of the universe, can only explain the existing conditions of nature by showing that it has been derived from some pre-existing condition through the action of known forces and laws. It may also show the high probability of a similar derivation from a still earlier condition; but the further back we go the more uncertain must be our conclusions, while we can never make any real approach to the absolute beginnings of things (S589 1901, 3–4).

What, then, of the success story everyone seems to read into the events surrounding that celebrated malarial fit Wallace rode out in early 1858? Well, it is mere history that his heroic early efforts in the field eventually shook loose the prize of natural selection from nature's cupboard, but this may not have been *the* full answer to Wallace's quest. In the mind of Alfred Russel Wallace, as distinct from that of Charles Robert Darwin, natural selection was more a *product* of evolution than it was its cause. True "Wallacism," it seems to me, must therefore be conceived of as, exactly, "*natural selection by evolution.*" Surely, he would say, there must be greater forces at work, forces that conspire to achieve the fleeting interface between survival and non-survival that natural selection ultimately represents. It is the particular combinations of these, at different times and places, that lead to dinosauric gigantism, wingless birds, handsomely adorned but deadly frogs—and finally, so we may believe, those most elusive of worldly spirits: men and women of inspired hearts, and open minds.

Notes

1. Note especially the passage from "On the Habits of the Orang-utan of Borneo" (S26 1857) produced in Chapter 18.

2. This position is reflected in words later appearing in his autobiography *My Life*: "My paper written at Sarawak rendered it certain in my mind that the change had taken place by natural succession and descent—one species becoming changed either slowly or rapidly into another. But the exact process of the change and the causes which led to it were absolutely unknown and appeared almost unconceivable" (S729 1905a, 1:360).
3. Besides the well-known impressions made on Charles Lyell and Edward Blyth, the following words from the President of the Geological Society of London, William J. Hamilton, concluding his 15 February 1856 annual address, are noteworthy: "I must direct your attention to a paper published by Mr. Alfred Wallace on the law which has regulated the introduction of new species. Mr. Wallace is a naturalist of no ordinary calibre. His travels in South America and elsewhere are a sufficient guarantee of his high merits; he now writes from Sarawak, Borneo. From a careful examination of the actual distribution of existing forms of animal life, and the gradual but complete renewal of forms of life in successive geological epochs, he has deduced the following law: *Every species has come into existence coincident both in space and time with a pre-existing closely allied species.* The question is one of great importance, and deserving the careful investigation of every geologist ..." (Hamilton 1856, cxviii).
4. As also implied by McKinney (1972b, xii).
5. That Wallace actually was at least a little upset at being forestalled by Darwin, Hooker, and Lyell is suggested by his later drawing attention, in notes in published works, to the fact he wasn't shown the proofs to his 1858 essay before it was published—and on no fewer than five occasions, extending over a four decade period (Meyer 1870; S725 1891, S516 1895, S599 1903, S729 1905). This harping on a matter that otherwise might be viewed as peripheral to one of the most successful essays in the history of science seems a bit odd, if there is not something there to read between the lines.
6. Wallace's history as a "heretic personality" is well documented by Shermer (2002), and his keeping quiet on a matter of such interest to him for a full six years (1858–64) requires some explanation. It should be remembered that this was the man who had, in 1843, at the age of just twenty, audaciously sent a technical suggestion on lens preparation to one of the leading experts on the subject (Smith 2006)—not to mention that 1858 communication to Darwin ...
7. These included the Linnean, Anthropological, Geographical, Ethnological, Zoological, and Entomological Societies, and the British Association for the Advancement of Science. In less than eight months in 1862 he made at least five such appearances including comments and/or presentations; in 1863, ten; and in 1864, eighteen.
8. The original version of this paper was not published in full. This selection is taken from another reading of it he gave, at a meeting of the Ethnological Society of London on 24 January 1865 (S104 1866, 67).
9. In his first known publication he writes: "The correction of false ideas and incorrect opinions on well-known principles of science are not among the least benefits that would accrue from such a course as we have recommended. How many having imbibed a false opinion, and having embraced it for a time, as a certain and undoubted fact, are, on seeing it contradicted without a clear explanation, more apt to doubt the truth of the principle they have misunderstood, than willing to acknowledge that they have been so long in error. As the means of inciting to the acquirement of knowledge on all subjects, of creating a wish for information on what have been hitherto considered as abstruse

branches of knowledge, but which are frequently among the most interesting and generally useful,—and of inspiring a desire for diving deeper into its inexhaustible stores not yet exposed to the scrutinizing gaze of man, such an institution as this, conducted in the way we have described, will be invaluable" (S1a 1845, 69). The relation between informed belief and justice is a theme central to Wallace's writings throughout his life. See Smith (2003–, Chapter 1) for discussion.

10. There are striking similarities between opinions expressed in this work and those found in one of his earliest writings, from about 1843: [in speaking of the rural Welshman] "Their preachers, while they should teach their congregation moral duties, boldly decry their vices, and inculcate the commandments and the duty of doing to others as we would they should do unto us, here, as is too frequently the case throughout the kingdom, dwell almost entirely on the mystical doctrine of the atonement—a doctrine certainly not intelligible to persons in a state of complete ignorance, and which, by teaching them that they are not to rely on their own good deeds, has the effect of entirely breaking away the connection between their religion and the duties of their everyday life, and of causing them to imagine that the animal excitement which makes them groan and shriek and leap like madmen in the place of worship, is the true religion which will conduce to their happiness here, and lead them to heavenly joys in a world to come" (S623 1905, 221).
11. For some other relevant analyses, see: Barrow (1986), Blum (2006), Cremo (2003), DeCarvalho (1988/1989), Fichman (2004), Inglis (1992), Lamont (2004), Nelson (1988), Oppenheim (1985), and Pels (2003).
12. Wallace's mimicry studies were apparently one victim of this "time out." His paper "Mimicry, and Other Protective Resemblances Among Animals" (S134), published on 1 July 1867, was written in "1865–1866" according to his autobiography (S729 1905a, 1:407). Perhaps he began work on it in late 1864 (not so long after the Papilionidae paper, S96) or early 1865 but put it aside in mid-1865 to concentrate on his spiritualism investigations, only to resume in early or mid-1866: in August 1866 he presented related work at the annual British Association meetings (S121) and later in the year made some further comments (S123, S123a). In his autobiography he notes that as of 23 February 1867 he was still "preparing for publication" the "Mimicry" paper (S729 1905a, 2:3).
13. Anonymous 1865. The texts of Hardinge's programs were shortly thereafter compiled and published by F. Farrah in the spring of 1866 as the 122 page monograph *Extemporaneous Addresses.*
14. Wallace includes no fewer than 114 lines of Hardinge's writings in the pamphlet version of *The Scientific Aspect of the Supernatural,* on pages 50 through 54. This is more quoted material than he produces for anyone else in the essay, and more than twice as much as for any other one person, with the exception of Augustus De Morgan. Hardinge was a familiar figure to both the American and English spiritualist communities, and her publications were readily obtainable—and, in fact, Wallace's annotated copy of her pamphlet *On Ancient Magic and Modern Spiritualism,* published in 1865, still resides among the materials from his personal library held by the Library of the University of Edinburgh. Wallace's Hardinge quotations in *The Scientific Aspect of the Supernatural* are from the essay "Hades," one of her *Six Lectures on Theology and Nature,* published in Chicago in 1860, so he must have known that work as well.

15. Slotten (2004), morever, relays a "spirit influence" story concerning the printed copies of the pamphlets as they lay in wrapping paper at Wallace's house prior to their distribution—a story in which Miss Nicholl played a role. Given the earliest Friday in November on which she could have produced mind-changing manifestations—9 November (her first seance, held at least a week earlier than the second and also supposedly in November, was less impressive)—and the date of the Huxley communication, it is apparent that the contents of the pamphlet were not based on any knowledge of Nicholl. This is also apparent from remarks made by John Tyndall, one of the colleagues to whom Wallace sent a copy, who reported " 'deep disappointment' because it contained no record of my own experiments" (S729 1905a, 2:280).
16. One of Wallace's pet complaints was that a theory shouldn't have to explain everything. For other examples of this sentiment in his writings see: S89 (1864, 111), S165 (1870, 332–33), S173 (1870, 9), S382 (1885), and S649 (1908, 1). It is hardly surprising that he kept mentioning this: it is a predictable accompaniment to his frequently stated belief in the existence of "more recondite" natural influences.
17. In 1885 he further contextualizes his position in the essay "Are the Phenomena of Spiritualism in Harmony with Science?": "Science may be defined as knowledge of the universe in which we live—full and systematised knowledge leading to the discovery of laws and the comprehension of causes. The true student of science neglects nothing and despises nothing that may widen and deepen his knowledge of nature, and if he is wise as well as learned he will hesitate before he applies the term 'impossible' to any facts which are widely believed and have been repeatedly observed by men as intelligent and honest as himself. Now, modern Spiritualism rests solely on the observation and comparison of facts in a domain of nature which has been hitherto little explored, and it is a contradiction in terms to say that such an investigation is opposed to science. Equally absurd is the allegation that some of the phenomena of Spiritualism 'contradict the laws of nature,' since there is no law of nature yet known to us but may be apparently contravened by the action of more recondite laws or forces ..." (S379, 809).