Excerpt from Caleb Williams Saleeby (1904)[1]

As yet, there is no biography of Caleb Saleeby. At the time of FM Alexander's arrival in London in 1904, he was remarkably influential. Trained as a gynecologist, he soon abandoned medicine for health journalism and promotion of causes. He was a fierce opponent of tobacco and alcohol consumption, a Fabian socialist and friend of George Bernard Shaw. He coined the term "smog."

Today, Saleeby is most known for his advocacy of eugenics. He was the founder of the English Eugenics Society. As testament to his personal appeal and promotional abilities, he recruited Winston Churchill to preside as Vice President of the First International Congress on Eugenics in 1912 London and brought Sir Charles Sherrington and Julian Huxley into the society – among other scientific luminaries.

In 1904, when this article was written FM Alexander had not, as yet, articulated an idea of inhibition as a core of his work. Their paths crossed twice. In 1908, when Alexander had letters to the editor published in the Pall Mall Gazette, when Saleeby was the Science Editor, and in 1910, when Alexander's Man's Supreme Inheritance was published at Methuen, Saleeby was the Medical Library Editor.

Cricket

Assiduously buttoning his left glove, the batsman wends his way to his wicket. His intentness and his difficulty in that adjustment may be correlated with the presence of more or less "funk." Now "funk" is an actual psychological entity. One may define it as the effect of the emotion of fear upon the neuro-muscular centres, the nerve-cells that control muscular action. To the cricketer this is anathema, to the singer a fearful joy. It has no value for the batsman; it is an æsthetic force for the vocalist. Mr. Edward Lloyd has admitted that he never sings so well as when he is slightly nervous, which is to say that this activity of the emotional centres lends tears or laughter to the voice. But the batsman dreads "funk," for his skill is only incidentally æsthetic. If you take the trouble, as I once did, of observing the frequency with which a batsman makes nothing in both innings—earns a "pair of spectacles"—you will find that the ratio exceeds that which could be accounted for by chance. The obvious explanation is that the batsman who failed to score in the first innings is all the more likely to repeat his distressing feat in the second, since that nice muscular co-ordination upon which depends his success is unbalanced by the memory of his previous failure and the apprehension of its repetition.

But whether or not he be hampered by this "moral fear," the batsman has next to come to terms with what we know as physical fear. For when he faces the bowler he may remember that a cricket-ball is an object of considerable mass—its weight on this planet

1. From: Saleeby, Caleb Williams (1904). *The Cycle of Life According to Modern Science: Being a series of essays designed to bring science home to men's business and bosoms.* Harper & Brothers Publishers, New York and London, pp 41-49.

being five and three-quarter ounces—and possessed, on its course towards him, of no inconsiderable velocity. The crack Australian bowler Turner was tested at Woolwich Arsenal many years ago, and was shown to bowl at sixty-six miles per hour. Now half the product of the mass multiplied by the square of the velocity gives the force of the cricket-ball ($= \frac{1}{2} MV^2$), and this is an exceedingly palpable force if the wicket be bumpy and the ball impinge upon your thigh or eyebrow. The tyro acts in accordance with the instinct of self-preservation, the first law of protoplasm; he therefore steps backward, away from the line of the ball's flight—"runs away from his wicket"—and is inevitably bowled. The first essential of batting (and it applies equally to the bowler who has to stop a hard return or the fielder who must get in the way of the ball and, lest his hands should fail, must "keep his legs together") is, therefore, to defy the natural impulse. So difficult is this that some coaches will fasten the beginner's right foot to the ground so that he cannot budge though he would. And the process by which the batsman "stands up to the bowling," by which your forbear to return a blow or to fling back an angry taunt, by which we exercise self-control and self-restraint, and by which, rather than by speech or reason, we are distinguished from the brute creation, is known as *inhibition*. It is at once the antithesis of volition and its highest expression.

The new science of psychology is, in this year of grace, by far and away the most interesting subject of human thought. The Greeks—or rather those Greeks whom we are officially told to admire—studied mind rather than matter, but to-day our study of matter has led us to the fact that the gray surface of the human brain—the *cortex cerebri*—is, for the denizens of our planet, at any rate, the most wonderful thing in the universe. It has been a long climax from the beginning of our nebula. Evolution is in climax yet, but its acme, for us, is the soft, gray, nervous protoplasm by the subtle chemical changes in your share of which you are at this moment conceiving the import of these words. And the most truly admirable of the functions of the cortex is this inhibition. Can we analyse, then, this faculty by which the batsman stands his ground?

We must first consider what it is that he must inhibit. It must be recognised that the type of all movement, whether in animals or plants, is reflex action. This simply means a movement in response to any external force. The *amœba* moves towards a particle of food that has favourably influenced its sense of smell (as we may figure it), or away from

an undesirable particle that has disagreeably affected it. Each movement is a simple reflex action. Volition, as we conceive it, is not involved. Now take the "sixthe eleven" school-boy facing the professional at the practice-nets. His sense of sight informs him of the rapid advent of an undesirable particle; he is disagreeably affected by the sensation; he voluntarily gets out of the way, and is bowled, or deserves to be. But, after all, there is not much volition in the matter. It is barely more than a simple reflex, as in the case of the *amœba* or a winking eyelid. The boy will be a man, and the muff a batsman, when he attains to inhibition of his reflex actions.

The vision of the ball takes place in the hind-most part of the brain. Thence nerve-fibres pass to the centres for muscular movement. These are most precisely defined. They lie at the sides of the brain in the "Rolandic area." As a result, impulses are sent downward to subordinate cells in the spinal cord, from which fresh impulses pass to the muscles of the right leg, which is withdrawn; and the pusillanimous batsman's leg stump is knocked out of the ground. The volitional centres, which have not yet been localised, are only slightly concerned in this process, as I have shown. But the trained batsman inhibits the performance of this all but reflex action. I suppose Grace has not run away from a ball for thirty years. His inhibitory centres have gained complete control of the quasi-reflex arc. Where the inhibitory centres are, no one has any idea; but nerve-fibres must pass from them to the cells of the Rolandic area and arrest or modify their motor activity.

Now, since the publication of [James's] *Principles of Psychology*, we have known that *will* is derived, both historically and in the case of each individual, from simple reflex action. Given a certain inheritance, your actions on any particular occasion will depend upon all the experiences of your life; that is to say, upon the influence of your past and present environment—*that is to say*, upon all the sensations which you have ever received. Now, sensations, or sensory stimuli, constitute the first half of the reflex arc, a motor stimulus constituting the other half. Every conceivable effort of the will results in a motor stimulus—either obviously, as in visible motion, or subtly, as in dilating the blood-vessels of a particular part of the brain—which probably happens when we will to attend to anything. But is it not clear that the motion in such or any other cases is not truly volitional? It is simply the delayed or modified second half of the non-volitional reflex arc. As far as I can see it, the truth appears to be that the real willing is—to use a paradox—the

negation of willing, the will *not to*, the control of the reflex act, or what the psychologists call *inhibition*. It seems to me that certain very common disorders of the nervous system support this theory that volition is really inhibition, or else the negation of inhibition—*i. e.*, simply letting things take their course. Let me try to illustrate this not very obvious idea. If you cross one knee over the other and tap the front of the first knee, the leg will give a little jerk. This jerk we may look upon as a typical reflex action, though there is some reason for thinking that it is not exactly typical. Now, if anything in the brain has interfered with the normal path of volition from the brain to the spinal cord and thence to the leg, we find that the "knee-jerk" is very much exaggerated, the explanation given being that the inhibitory action of the fibres from the brain is cut off, so that the reflex action, which is normally under restraint, is allowed full play. Does this not look as if the so-called paths of volition were really paths of inhibition, and that an "active" exercise of will is really a refusal to exercise the inhibitory power over an act which is really only the delayed and modified second half of a reflex action? If you accept this view, you will agree with me that when we "voluntarily" do something we "want to do" we are not really exercising any active power, but are simply allowing ourselves to be affected by circumstances; or, in other words, are simply permitting the complex reflex action to take place. The real act of will is in not going when we yet want to go; an act of volition which is really not an act of volition at all, but an act of inhibition. I hold, therefore, as I have tried to show, that inhibition is the only true volition; or, in other words, that the true act of will is the will to refrain. It may perhaps be of interest to find, in the disorders of the nervous system, some material support for what is an old and honoured moral doctrine. But I have wandered far from the pitch!

Of course, inhibition comes in again a thousand times in batting. If you have the bad habit of counting your runs and know that they number ninety-nine, you must inhibit the almost irresistible impulse to smite wildly at the next ball that comes and thereby complete—or lose—your century. (And this reminds me that the tyro is often a "blind smiter." He shuts his eyes and then lets fly. Shutting the eyes is, of course, an obvious reflex, based upon the need for protection of such delicate organs. Obviously it has to be. Those whose eyes could not protect themselves by a rapid enough reflex in this respect were obviously less "fit"—and have not survived.) Then, again, if you are a "stone-waller,"

accustomed to bat for an hour without making ten runs, and your side needs fifty runs to win, with only twenty minutes to make them in, you must inhibit the long-cultivated reflex—the “habit”—of carefully “blocking” every “half-volley,” and must exercise a subtle form of self-control indeliberately conquering yourself and adopting the forcing tactics of a Jessop.

And, now, what is it that puts batting as a feat of muscular co-ordination far above golf or even billiards? It is the fact that the batsman addresses a moving object. He has to “time” the ball; and, assuming that he has acquired inhibition, he is a good batsman almost in proportion to this power of “timing.” The ball has twenty-one yards to travel from the bowler's arm to your bat. With fast bowling we may reckon that its whole journey occupies about three-fifths of a second. To get the best result, from your point of view, your bat must meet the ball at one particular moment near the end of this short period. It is as delicate a nervous feat as I know. Your two eyes must work exactly together, else you will receive two images of the ball, which would be fatal. To this end each eyeball must be moved by the co-ordinated action of no fewer than six muscles. The twelve are controlled from one centre in the brain, which not only enables the images in each eye to correspond with one another—so that the resultant single image may be well defined. Here another sense is called in—one of the many unknown to those who prattle of a “sixth sense.” It is called the muscular sense, and gives you a consciousness of where the muscles concerned precisely are, for, of course, a muscle alters its exact position in space when, and in proportion as, it contracts. The twelve ocular muscles combine to form a stimulus of this muscular sense. This informs you to what degree and in what direction the eyeballs have been moved in following the ball's flight. The muscular sensation is combined and co-ordinated with the visual impression, the two together actually defining for you the precise position of the ball in space. This fact determined, there are somehow set a-going motor centres in the Rolandic area. They command the spinal-cord cells, which transmit the mandate to the cells of the many muscles of the back and shoulders, and arms and legs, which instantly burn the sugar stored within them, and transform its potential into kinetic energy by which they contract and propel the “right spot” of the bat yo the exact part of space where the flying ball was previously determined to be — and the batsman scores a boundary or is caught in the long field; the difference

between the two being mainly determined by the nicety of his inhibition over his left shoulder-cap or deltoid muscle. And this feat—of which, if we try to conceive its chemistry, this is obviously only a ludicrously inadequate summary—is accomplished in about the time you take to the inconceivably more wonderful feat of attaching ideas to the black marks which cover this paper.