

No 16 Rudolph Magnus (1873 – 1927) (I)

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1. The last few talks were about the neuroscientist Sir Charles Sherrington. He is remembered in the scientific world for his experimental work on the nervous system and especially for his book *The integrative action of the nervous system* which is widely seen as the founding text of modern neuroscience.
2. Our main interest in him is because he singled out Alexander for special mention in his book *The endeavour of Jean Fernel*. He said:

Mr Alexander has done a service to the subject by insistently treating each act as involving the whole integrated individual, the whole psychophysical man. To take a step is an affair, not of this or that limb solely, but of the total neuro-muscular activity of the moment – not least of the head and neck.¹

3. I finished by suggesting that looking at the AT in a Sherringtonian way might help us in building bridges between it and the general world of science and medicine.
4. Today's scientist is Rudolph Magnus who was inspired by Sherrington and basically worked out the neuroscience of posture in the dynamic way we think of it in the AT.
5. I was reading about posture in a modern medical textbook on the central nervous system and though it does not mention Magnus by name, its description of the postural reflexes could have come straight from Magnus himself.²
6. He is one of those scientists whose work has so truly stood the test of time that we never think of how we know the things he worked out.
7. Magnus never said anything about the Technique, and living and working as he did in Germany and Holland during the decades around the turn of the nineteenth century, it is unlikely he ever heard of it.
8. Magnus' died in 1927 but his work created a great deal of interest among medical followers of Alexander during the late 1920s and 1930s. When Alexander heard about it, he

¹ Sherrington (1946)85

² See Brodal (1998) p353

became convinced that Magnus had produced scientific evidence of the existence of the *primary control*.

9. He sent a letter to the British Medical Journal that was published on 9 July 1932 in which he challenged medical men to put his technique to the test.

10. He said in the letter:

*On the strength of forty years' practical experience I am bold enough to believe that this would result in proof of the soundness of my technique as conclusive as has been the case with regard to my employment of the primary control, the existence of which has been conclusively proved by the experimentation of the late Rudolph Magnus of Utrecht.*³

11. As can happen with Alexander's writings, he gets things wrong in a way that makes it very easy, especially if you are of a scientific turn of mind, to dismiss him. At the same time, from our own experience and the observations of Sherrington, and other distinguished scientists, we know there is something profoundly interesting happening when we give and have AT lessons.

12. So for the next couple of talks I will be looking at Magnus and his work to see how it contributes to our own understanding of the AT and the build-up of a scientific understanding of the AT.

Sources

13. As usual, I'll give you my sources. It's not that I expect you to rushing out to get them any time soon. But it's nice to have them on the record and if at any stage you want to go into any of this yourself, the references are there for you.

14. The primary source is the complete report on Magnus' researches which came out in 1924. It was published in German under the title *Körperstellung* but this would not have been a problem to Western scientists at the time because they all studied German which was known as "*the language of science*".

15. But it was a total barrier to me when I started looking at Magnus. So you can imagine how pleased I was when I discovered a copy of a relatively recent English translation from an extremely unlikely source. The translation is called "*Body*

³ Alexander (1995)p134

Posture” and it was published in India in 1987 on behalf of the United States Department of Commerce, from whom I obtained it.

16. I have been told that all 800 pages can now be downloaded from somewhere on the internet but I have not been able to find the site. But it is there somewhere and could be an option if you find yourself with a spare weekend. But I do not think it should have a high priority on your list of things to do.
17. There is also a very badly written biography by his son which was published in the year 2000. This was somewhat delayed given that Magnus had died seventy-three years earlier, but it adds useful details on Magnus’ life and reprints some of his papers that are otherwise hard to get.
18. The most accessible English-language sources for his work are the lectures he gave in Britain after the publication of *Körperstellung*. In 1925 he delivered a special invitation lecture at the Royal Society in London. It is called the Croonian Lecture and he gave it at the invitation of Sir Charles Sherrington who was President of the Royal Society at the time.
19. The lecture is called *Animal Posture*. If you go along to the library in the Royal Society, you can get a copy. It’s a very nice place to visit and is full of history. The Royal Society was founded in 1660. Among its early members were Christopher Wren and Isaac Newton. It occupies a splendid building in Carlton Terrace, overlooking Green Park.
20. Magnus also gave two lectures, called the Cameron Prize Lectures, in the University of Edinburgh in 1926, which were subsequently published in the medical journal the *Lancet*. You can get these from the Wellcome Institute Library on Euston Road. This is a fantastic source of information on everything related to the history of medicine and is free.
21. There is also a book published by Stanford University in California which reprints three draft lectures Magnus was scheduled to give there in 1927 but he died before he could do so.
22. Two of these are outside our scope of interest. But the third is quite philosophical and is called *The physiological a priori*. This reflects Magnus’ interest in the German philosopher Immanuel Kant.

23. The lecture is a draft and reading it one can only feel an immense regret that Magnus did not live long enough to develop his ideas further.
24. There is also a very nice little book by Walter Carrington, half of which is devoted to Magnus⁴. This was written in 1950 when Alexander was still alive. It was published in 1994 by STAT books.
25. The discussion of Magnus is extremely useful and I thoroughly recommend it. It is in the library – and there may still be some copies for sale.
26. Magnus' work and how it fits into the AT is a big topic and I can only give you an outline summary in these few talks. For those who want a bit more, I have put a paper on my website which you can find at: <http://www.geraldfoley.com/Magnus.html>

Rudolph Magnus – biographical details

27. So who was Rudolph Magnus what did he do?
28. Like most famous scientists, his life was fairly undramatic. He was born in Germany in 1873 and grew up a bright and studious child. He studied medicine in Heidelberg University and was awarded his PhD *summa cum laude* in 1898.
29. After he got his doctorate, he was appointed Associate Professor of Pharmacology in Heidelberg which shows how bright a talent the university thought he was. Pharmacology is the study of drugs, mainly poisons, and how they affect the functioning of the body and the nervous system.
30. In addition to his science, he was a highly cultured man. He was interested in the visual arts and philosophy especially Emmanuel Kant (1724-1804). He also had a special interest in Goethe (1749–1832) who was both a poet and an early scientist.
31. In fact, Magnus took time off from his university and research duties in the early 1900s to repeat Goethe's scientific experiments on colour using the original laboratory instruments in the Goethe Museum. He did a series of ten lectures on Goethe's scientific work which were published as a book in 1906. This was republished in English in America in 1949 under the title *Goethe as a scientist*⁵ – but I have not seen it.

⁴ Carrington, Coghill and Magnus(1994)p43-54

⁵ O. Magnus (2002)p145

32. In the early 1900s, arising from his work on pharmacology, Magnus became interested in the overall workings of the nervous system. This was the time when Sherrington was publishing his ground-breaking neuroscientific papers and laying the foundations of modern neuroscience.
33. Magnus heard Sherrington lecturing at a couple of conferences and was impressed by his work. He realised that one of the neurophysiology problems he was wrestling with could best be researched by going to England and working on it with Sherrington for a while in his laboratory. So, in 1908 he spent his Easter holidays with him in England experimenting on dogs.
34. This was a life-changing event for Magnus. Working with Sherrington gave Magnus his interest in the study of posture which lasted for the rest of his life and on which his scientific reputation mainly rests.
35. It was while he was working with Sherrington that he got the news that he had been appointed Professor of Pharmacology at the University of Utrecht in the Netherlands and he remained in that position until his death.
36. Over the years, he and his team in Utrecht kept up a steady output of scientific papers. They were mainly on different aspects of the neurophysiology of posture but included a variety of other subjects over the years. In his lifetime, he published well over 300 scientific papers on various subjects.
37. His public life as a major scientist lasted just three years. In 1924, the full report of his studies on posture came out in German; in 1925 he gave the Croonian Lecture; in 1926 he gave the Cameron Prize Lectures in Edinburgh. The next year he died at the age of 53 while on a walking holiday in Switzerland.
38. If he had lived, his book on posture would undoubtedly have been translated into English at the time. And he would have been available for the conferences, lectures and visiting professorships by which most scientists make their work more widely known.
39. As it was, he had been nominated for the Nobel Prize in 1927 and it would almost certainly have been awarded to him but that was the year he died. The Nobel Prize is not awarded posthumously.

40. Everyone who knew him seems to have liked and respected him. He is described as having a candid generous and open personality⁶ and there is a rather splendid photograph of him in a black hat in the Lane Lectures book.

The question of posture

41. It is ,of course, Magnus' work on posture that interests us as AT teachers. At the same time, we are rightly cautious about using the word posture, not because it is unimportant, but because it is important and is so widely misunderstood.

42. We all know the common reaction we get when we mention to people that we are connected with the Alexander Technique. If they have heard of it, they stiffen themselves up, stick out their chests and say "*Must watch my posture when I'm with you.*"

43. This to us is a negation of the whole idea of posture. For us, posture is extremely subtle, complex and dynamic. It is how we are when we are poised, alert, ready to go into action but still in repose. It is about the disposition of the body parts relative to each other when we are not holding a pose or actively doing something.

44. Sherrington had felt posture provided a very useful entry-point into the study of the whole neuromuscular system. In his book *The integrative action of the nervous system* he wrote:

*...much of the reflex reaction expressed by the skeletal musculature is postural. The bony and other levers of the body are maintained in certain attitudes both in regard to the horizon, to the vertical, and to one another...Innervation and co-ordination are as fully demanded for the maintenance of a posture as for the execution of a movement.*⁷

45. It was the complexity of posture and the promise that studying it would lead into a deepening understanding of the neuromuscular system that attracted Magnus. He said in one of the Cameron Prize lectures:

*...posture is an active process, and it is the result of the cooperation of a great number of reflexes, many of which have a tonic character.*⁸

⁶ Magnus (1930)244

⁷ Sherrington (1906)339

⁸ Magnus (1926a)p

46. “*Tonic*” means connected with tone. Tone is the minimum level of tension in a muscle when it is holding its shape but not doing anything.
47. To summarise, posture, as we in the AT understand it, has three aspects:
- The reflex or built-in behaviour of our musculature
 - The habits we have acquired and which we no longer notice
 - Our voluntary or deliberate actions.
48. Next time, I will tell you about how Magnus and his team set about untangling these issues and developing the modern scientific understanding of posture in the years before and after the First World War and how it fits into our own evolving scientific understanding of the Technique.

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