THE INDEPENDENT ON SUNDAY

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Mystery solved – by Ministry of Silly Walks

Scientists' experiments with volunteers help prove why we swing our arms

By Steve Connor, Science Editor

Wednesday, 29 July 2009

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The mystery of why people swing their arms while walking rather than holding them still and rigid like the famous silly walk of John Cleese in his Monty Python sketch appears to have been solved. An experiment involving making a group of volunteers take equally silly walks in a laboratory setting has confirmed that arm swinging makes walking more efficient and easier.

BBC

John Cleese demonstrates the work of the Ministry of Silly Walks

Although it may seem obvious why people swing each of their arms in opposition to their legs, scientists have puzzled over the practice for many decades because it seemed to serve no mechanical function given that the arms do not touch the ground.

One extreme theory even proposed that arm swinging while walking was hard-wired into the human nervous system and served no modern purpose because it was a vestigial relic left over from when our animal ancestors walked on all fours.

However, a study based on the movements of 10 volunteers who were asked to perform a series of unnatural walks under experimental conditions has shown that swinging the arms in opposition to the legs significantly increases the efficiency of walking.

Steven Collins, a biomechanical engineer at Delft University of Technology in The Netherlands, said normal arm swinging while walking requires little effort and makes it easier than keeping the arms still. "This puts to rest the theory that arm swinging is a vestigial relic from our quadrupedal ancestors."

In order to answer the question of why humans swing their arms while walking, Dr Collins and his colleagues set up an experiment where people were studied as they walked in a variety of poses – normally with the arms swinging in opposition to each leg, with their arms at their sides either tied or held there voluntarily, or with each arm unnaturally forced to move in synchrony with each leg.

First, the scientists found that arm swinging – either normally or abnormally – actually required very little effort from the shoulder muscles because the movements tended to arise naturally from the twisting movement of the body as it walked. "Further, our results showed that normal arm swinging made walking much easier. Holding the arms at one's sides increased the effort of walking – measured by metabolic rate – by 12 per cent, which is quite a lot of walking, about the same as walking 20 per cent faster or carrying a 10 kg backpack," Dr Collins said.

The study, published in the journal Proceedings of the Royal Society B, also found that the natural swinging motion of the arms tended to counteract the twisting motion or "torque" of the body, created by the movement of the two legs along a straight path.

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Comments

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Well duh

mounty1 wrote:
Wednesday, 29 July 2009 at 01:08 am (UTC)

Yet more stunning revelations from the dept. of the bleedin' obvious.

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Astounding

cavirac wrote:
Wednesday, 29 July 2009 at 08:18 am (UTC)
Agree with mounty 1, turned to read article in shear disbelief, could we have a cost and benefit analysis of this momentous discovery!!!!!!!

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archie23 wrote:
Wednesday, 29 July 2009 at 10:33 am (UTC)

It is not useless information. From the research we learn that to burn more fat burning we should keep our arms by our side when walking.

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sinbadsilk wrote:
Wednesday, 29 July 2009 at 12:27 pm (UTC)

Indeed. i'm glad I'm not the only one who spotted a way to increase exercise efficiency through walking.

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why?

jassyblue80 wrote:
Wednesday, 29 July 2009 at 11:00 am (UTC)

What is the point to this research? cure cancer or HIV? nope lets look at why people walk the way they do!!

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Re: why?

colinru wrote:

Wednesday, 29 July 2009 at 02:27 pm (UTC)

Whilst superficially correct you should remember that many of the life saving diagnostics and treatments available today were achieved because of Scientific Curiousity, with no obvious immediate benefit, from a Century or more ago. One Cancer Breakthrough can, arguably, be traced to the work of an 18th C naturalist who had a thing about Moles. MRI scans are possible because of personal and State rivalry in low temperature Physics in the 19th C. Many radio technologies are based on the work of Oliver Heavyside who, to put it kindly, was clever but of an unusual social manner. The unkind would say that he was barking.

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Beware

pcsobilly wrote:

Wednesday, 29 July 2009 at 04:24 pm (UTC)

This is funny, the Dutch adore joking, it wouldn't be suprising if someone has funded this study just for kicks. Guess we won't find out just how funny they find our reactionary responses.

Walking like penguins to burn more fat - please stop already.

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Majority will instinctively say it makes walking easy

corporeal_v001 wrote:

Wednesday, 29 July 2009 at 04:35 pm (UTC)

Its a bit like telling us that if we breath through our nose instead of the mouth it makes the respiration process more efficient :o)

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Refreshing

derekcolman wrote:

Thursday, 30 July 2009 at 07:09 am (UTC)

It is refreshing to find that some scientists have managed to get funding for a project that has no possible link to climate change. It demonstrates the value of real world evidence to form a theory. No computer modelling involved here.

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routemaps wrote:

Thursday, 30 July 2009 at 09:08 am (UTC)

This relationship between arm movement and bipedal locomotion was completely explained in the book Running with the Whole Body by Jack Heggie in 1986.

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Bring in the clowns

petmule wrote:
Thursday, 30 July 2009 at 02:36 pm (UTC)

Try walking without swinging your arms - a rather effective and inexpensive experiment. You might say it's a question of balance . . . . any questions?

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Tradition

tgeahre wrote:
Thursday, 30 July 2009 at 04:41 pm (UTC)

We were raised swinging our arms. I would question the logic of their findings by stating that any person who has been raised from birth to swing his/her arms is not allowed to be a viable subject for testing. I would hope my reasoning obvious. Just in case it isn't as apparent as it is to me, people who are born walking in any manner will walk that way and seldom learn to walk another way (comfortably/efficiently). The fact that it is written into our nerves shouldn't be the question when looking at these 10 volunteers. The important question is, "Is this trait already written into their psyche, bone structure, and muscle memory?" I would like to see the experiment redone with people who did not learn to walk with hands in opposition to legs. then teach them to do the different walks, including the walk we call normal. That would then provide a reasonable Control group.

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wow.....

jonnyblazed wrote:
Thursday, 30 July 2009 at 06:03 pm (UTC)

seriously? this is what people are doing with their time and research dollars?

i would hardly call this a "mystery solved". it still doesn't explain WHY we move our arms.... just that it makes it more efficient. perhaps it makes walking more efficient because it really IS a vestigial relic and making an effort to counteract a vestigial relic reduces efficiency.

to quote probably 1 of the most appropriate comments made on this article: thank you very much for nothing, "dept. of the bleedin' obvious." (ty mounty1)

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