So McEnroe had a point after all. Scientists study 4,000 tennis points and find 80% of umpire 'out' calls are 'in'

By DAVID DERBYSHIRE FOR MAILONLINE
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John McEnroe may have had good reason to turn on the tantrums.

Scientists have shown that tennis umpires tend to succumb to an optical illusion that makes balls appear to be out when they are just inside the line.

The discovery, based on analysis of more than 4,000 Wimbledon tennis points, comes nearly three decades after McEnroe’s infuriated outbursts at umpires’ apparent sight problems made him a household name.

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“You cannot be serious!” he yelled. “That ball was on the line! The chalk flew up! It was clearly in! How can you possibly call that out?”

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Dr David Whitney, who led the study, said the human brain struggles to keep track of moving objects - or objects that appear to move because we are moving our heads or eyes.
"The visual system is sluggish. It takes 100 or more milliseconds for us to become aware of an image that strikes our retina," he said.

"So by the time we perceive an object like the coffee cup in one location, it will have already changed location as we move toward it. Our perception lags behind reality."

To get around this delay, the brain tries to compensate and mentally repositions the object where it thinks it should be. The trouble is, it often overcompensates.

Studies have shown that when people follow an object moving in a straight line, their brains usually think the object is slightly further along its path than it is.

"You cannot be serious!": The 1980 war of words between McEnroe and referee Fred Hoyles

Dr Whitney said umpires, players and spectators would experience the same illusion at Wimbledon. If a ball is moving through the air towards the chalk lines from left to right, it will appear to spectators at any one time to be slightly further right than it really is.

"And if it bounces close to the line inside the court, many people watching will wrongly 'see' it touching the grass outside the court."

That means umpires will make far more mistakes when calling a ball 'out' than calling one 'in', he said.

To test the theory, his team looked at 4,000 randomly selected tennis points from the 2007 championship.

Out of the 83 incorrect calls, they found that 70 - or 84 per cent - were wrong 'out' calls.

This supports the view that visual processing rather than poor judgment was to blame.

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Actress looked glowing

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Revealed! David Cassidy, 64, got caught in a catfight between his girlfriend and another woman Police called to house in Boca Raton, Florida

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Girls star Lena Dunham to show animated inked skin in guest spot on The Simpsons... as she catches Homer's wandering eyes

Business in the front, party in the back! Hugh Jackman showcases throwback hairstyle as he brings back the mullet in new film Chappie

How Rita Ora, the risqué new star of BBC's The Voice - and daughter of an Albanian pub landlord - has built a career out of outrageous attention seeking

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swap hints Emilia could be chef Marco’s No 4
Emilia Fox was snapped leaving her West London home

A winning look! Anne Hathaway, Jessica Chastain and Patricia Arquette stun in elegant dresses as they score top honours at the AFI Awards

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‘I imagined Halle Berry coming out of the water’: Samantha Harris reveals she channelled Hollywood star’s Bond performance for Flickerfest acting role

Rainbow Brite! Liam Hemsworth steps out with mystery blonde while sporting multi-coloured nail polish on his toes during break Down Under

Broody Heidi Pratt cradles a cuddly toy as she and husband Spencer Pratt talk about naming future child Speidi Call a Speidi a Speidi?

What a beach bum! Stunning Irina Shayk reveals two hand prints on her pert derrière as she strikes a pose for idyllic coastal snap Ronaldo’s hands?

Michelle Keegan shows off her trim figure as she rounds up gym session in sporty gear and retro scrunchie Her rigorous workout routine really shows

‘Das my girl! Danny Dyer’s daughter Dani gets pally with model Casey Batchelor at East London rehearsals of their new gangster flick Just like her father
“I couldn’t think of anyone better”. Frankie Bridge sends well wishes to Strictly tour replacement Rachel Stevens after pulling out due to pregnancy.

Neil Patrick Harris and Elton John’s husband David Furnish take their kids paddle boarding as they continue couples’ retreat in Hawaii. On St Tropez break.

You Got It All! Union J star Josh Cuthbert displays his Barbados tan as he arrives at Hollywood nightspot with stunning girlfriend Chloe Lloyd.

Doing her thing! Tulisa Contostavlos cuts a striking figure in bold geometric-print dress before slipping into black and white poncho for promotional duties.

Brit abroad! Elton John wears a Nike polo shirt and black shorts to shop at Prada with Neil Patrick Harris and David Burtka. Belied his star status.

She’s red hot! Miranda Kerr shares behind the scenes snap from her raunchy Harper’s Bazaar photo shoot. Mind-bending look.

Hometown glory: Alex Gerrard dons faux fur gilet for a girlie night out with her pals... as she prepares to quit Liverpool for Los Angeles.

Pregnant Catherine Tyldesley covers up her bump in a faux fur coat as she celebrates one-year anniversary with fiancé Tom. Special evening for pair.


Heavily pregnant Shakira steps out with her brother as she prepares for the birth of her second child.
Any day now for the Colombian singer

Carry On star and That Was The Week That Was stalwart Lance Percival dies aged 81
Died after 'a long illness. His funeral will be held later this month

'I'm left to rot like these walls': Middle-aged photographer takes nude self-portraits in abandoned buildings to show her fear of aging

'Dance it out!' Kelly Clarkson shares heartwarming video of daughter River to promote new single Heartbeat Song
Short but sweet

Kelly Brook nails off-duty chic in black skinny jeans and leather jacket as she continues new weight-loss mission
New face of Atkins diet

'I think Amal is going to kill it': Giuliana Rancic predicts Mrs Clooney will be best dressed at Golden Globes
Rumoured to be attending with George

Mark Wahlberg's wife Rhea rips Bieber's CK ad and says her husband's shots were the real deal amid claims Justin's package got a digital boost

Rihanna rocks customised varsity jacket poncho on chilly NYC outing
She sacrificed her warmth in the name of fashion

'Behind the scenes for my new campaign': Brooklyn Beckham follows in his family's fashionable footsteps as he shares modelling snaps on Instagram

I am Batman's nemesis - so you better behave! 13-year-old Gotham star uses villain role to keep her baby brother in line
Clare Foley is young star

EXCLUSIVE 'My boob was on Cameron's
Charlotte Crosby on the moment her body was projected onto the Houses of Parliament

“We have to set this kid straight”: Liam Neeson prank called Maggie Grace’s ex-boyfriend as his fearsome Taken character

Madonna accused of using Paris terrorist attack to promote her album Rebel Heart

Melanie Sykes steps out make-up free in gym gear and beanie hat as she goes out and about in North London

All aboard! Nicole Scherzinger flashes some cleavage in cut-out LBD... as she is unable to hide her excitement at London Boat Show launch

Only the best for baby! Abbey Clancy keeps her pregnant tummy warm as she collects Sophia following indulgent spa day

T’is the Ski-son! ‘Mrs Bond’ Rachel Weisz goes make-up free as she hits the slopes in Austria... while husband Daniel Craig shoots Spectre

Kylie Jenner, 17, dresses down as she steps out with boyfriend Tyga, 25... after describing blossoming relationship as ‘strong infatuation’

Age is just a number: Music legend Joni Mitchell, 71, is unveiled as the new face of Saint Laurent - days after Joan Didion, 80, debuted Céline campaign

Gillian Anderson, 46, wows as she wears her buttermilk yellow dress unzipped to the cleavage at pre-Golden Globes bash

Still shining
Not there fur long! Kim Kardashian wraps up in fluffy coat and skintight black trousers as she and Kanye West jet out of New York after whirlwind visit

How chic Kate claimed the style crown: As the Duchess of Cambridge turns 33, she's more elegant than ever... and it's all down to Prince George

"She doesn't like to leave me with the kids": Broadchurch's Matthew Gravelle says his portrayal of child killer has left his own WIFE in fear of him

Jennifer Connelly, 44, wows in chic new Louis Vuitton campaign Photographed in Miami by Bruce Weber

"Ladies unite": Charli XCX teams up with fellow British singer Rita Ora as she unveils her new single Doing It Both have duetted with Iggy Azalea last year

Proud mother! Kym Marsh cheers on teenage daughter Emilie Cunliffe as she auditions for The Voice Corrie actress cheered from backstage

It's over... again: Chloe Sims and Elliott Wright split up for a second time after giving their relationship another go Split in November after six months

Big Bang Theory's Jim Parsons leaves 13-year-old super fans speechless after surprising them on Ellen DeGeneres Show She has brain tumour

A trim and toned Chelsea Clinton leaves four-month-old daughter Charlotte at home to enjoy a rare night out Just given birth to her first child

On/off couple Chris Brown and Karrueche Tran enjoy casual lunch date at Urth Caffé in
West Hollywood
Are reportedly in couple’s therapy

Pulling out all the stops! Chloe Goodman makes desperate last ditch attempt to save herself from eviction with bikini clad display on Celebrity Big Brother

“I've never had this sort of connection”: John Cleese, 75, claims he never ‘experienced love’ before meeting FOURTH wife Jennifer Wade, 43

Courteney Cox keeps a protective arm around daughter Coco, 10, as they enjoy a low-key girls’ shopping trip
A bit of one-on-one time for mum and daughter

Is this the coolest campaign ever? David Beckham, Rita Ora AND Pharrell Williams join forces for adidas to define what it means to be a superstar

Seal hits the slopes with his son Johan for a ski vacation... as ex Heidi Klum returns from romantic Caribbean holiday with her toyboy
In Mammoth, California

Kim Kardashian heats up freezing New York in cleavage-baring dress to attend John Legend's birthday party with Kanye West
Putting it all on show

Sold! Backstreet Boy A.J. McLean makes a cool $1.2 million profit on his Hollywood Hills home
Bought in 2001 for $430,000

Jennifer Lopez is a classic beauty in rose hues to promote her new film... as the multi-talented singer is tipped for Las Vegas residency
Just like Britney & Celine

Tina Fey and Amy Poehler will not hold back on topics like Bill Cosby for their final time hosting Golden Globes
Star-studded ceremony is on Sunday

Jodie Kidd replaces Sally Bercow on The
Jump after she is forced to pull out after fracturing two ribs during training. Another bites the dust.

Total Recall! Cycle enthusiast Arnold Schwarzenegger takes his bike for yet another spin. The 67-year-old worked up a sweat on his wheels.

Victoria Silvstedt, 40, shows off her beach-ready bikini body in pink string two-piece as she enjoys St Barts getaway. Fabulous in fuchsia.

Back To The Future's DeLorean at the centre of legal battle over trademark violations as 1985 film celebrates 30th anniversary. John DeLorean’s widow.

“I’ve been running around my hotel room screaming!” Felicity Jones reveals excitement at BAFTA nod as stars respond to their nominations.

Downton Abbey’s Joanne Froggatt looks sensational in tight sky blue two-piece as she takes husband James Cannon to pre-Golden Globes event.

Oscars producers fear they will ‘lose viewers to Downton Abbey’ because audiences are not interested in the niche films set to dominate nominations.

“I’m missing a bit of my brain, which might be quite apparent.” Katie Hopkins discusses her epilepsy ordeal on Celebrity Big Brother. Diagnosed at 18.

“Thanks Dr. Silly Putty!” Kaley Cuoco jokes about nose job rumors after nasal surgery by wearing prosthetic in ‘big reveal’ photo. Went under the knife.

Vinnie Jones shows off his playful side as henchman Gareth in Galavant... as new stills of fairytale comedy are released. A comedic role.
Mila Kunis and Ashton Kutcher's baby daughter Wyatt seen for the first time in leaked family holiday card
She was born on October 1

Letizia reigns in purple! Spanish queen shows off her stylish side in cerise as she and Felipe welcome dignitaries to Madrid
Her favourite colour

Calum Best and Cami Li share a kiss on Day 2 in the Celebrity Big Brother house... amid reports 'womaniser has sets his sights on tattooed model'

Bankruptcy, boot camps and THREE hair transplants! How Calum Best cleaned up to become Big Brother's most eligible bachelor
He's never been in love

Coronation Street's Ken Morley boasts he 'groped and grabbed' women in the 1980s: "Everyone was at it" claims Celebrity Big Brother housemate

Would you let YOUR man wear a shaggy sheepskin coat or knitted crop top?
Topman sets the season's trends as LC:M kicks off

Leading ladies, assemble! Rosamund Pike, Amy Adams and Reese Witherspoon toast their 2015 BAFTA nods as they make stylish appearance at pre-Golden Globes bash

The toast of Tinsel town! Eddie Redmayne and Felicity Jones presented with congratulatory cake as they both land 2015 BAFTA nominations

The Grand Budapest Hotel leads the 2015 BAFTA nominations as Rosamund Pike, Reese Witherspoon and Felicity Jones battle it out for Leading Actress

Cheeky Cara Delevingne photobombs fellow supermodel Naomi Campbell as she rocks a seriously sexy low-cut minidress at pre-Golden Globes bash

EXCLUSIVE: It might be Kate's birthday but HARRY is the nation's favourite royal... Prince
is number one while the Duchess languishes in second place.

Vogue cover girl Jourdan Dunn reveals strains of being a working mother ... and how she was 'jealous' of son's relationship with his grandma after leaving him for work.

Joined at the hip! Inseparable couple Nikki Reed and Ian Somerhalder opt for trademark casual attire as they enjoy another day out.

Miley Cyrus puffs enormous hand-rolled cigar in controversial new selfie... before posting snap of bloody knee as she continues to make light of 'drug allegations'.

A+ for style! Kimberly Stewart shows off her slim figure in leather and leggings on the school run. Looked chic dropping her daughter off at school.

Pregnant Keira Knightley jets into LA for Golden Globes... as she scores MORE awards season success with a BAFTA nomination.

The Kat that's got the cream! Atomic Kitten star Kerry beams as she slips into all black ensemble for dinner date with towering George Kay.

Vampires don't get sunburn! Twilight actress Ashley Greene sports painful-looking red shoulders and criss-cross strap marks. Ouch, looks sore.
GADGET REVIEWS

Gadget review: Nexus 7 tablet - Premium quality at an affordable price

The Nexus 7 is a premium tablet which comes at a mid-range price. That's the main selling point, though it doesn't do justice to its sleek style and detailed screen.

Headphones: Musical Fidelity EB-33

The Musical Fidelity EB-33 in-ear headphones are impressive. They offer a strong performance which more than matches their value - and look good too.

Gadget of the week: Orbotix Sphero 2.0

The Sphero 2.0 is a modern Christmas present. In years past you would have had a remote-control racing car running on AA batteries.

Gadget review: Snugs fitted earphones

Sound quality is normally the purpose of a headphones review - but not in the case of Snugs, because they can be used on any earphones.

Gadget of the week: Waka Waka solar powered lamp

The Waka Waka lamp and phone charger is a useful camping tool and something that could be extremely useful in the developing world.

Gadget review: Tivoli Radio Silenz noise cancelling headphones

The Tivoli Audio Radio Silenz headphones are light, comfortable and portable, which makes them good for travel. They feature stylish wood panels.

Gadget of the week: Snapdragon 540 degree Photobooth
The Snapdragon Photobooth isn't a
gadget you can buy, but it is the
coolest thing we've seen this week -
it's made up of 130 HTC
smartphones around a spiral unit.

Gadget review: Jawbone Mini Jambox
Fun. That's the first word that comes
to mind when reviewing the
Jawbone Mini Jambox. As you
would expect from a product with
mini in its name, it's small.

Gadget of the week: Philips Wake-up Light
can make the mornings easier
Nobody likes getting up in the
morning. That's a fact. So spending
money on anything that makes it
less painful is probably a sound
investment.

Gadget review: Skullcandy Crusher
Headphones
The Crusher does exactly what it
says on the tin. Unleash an
unrelenting torrent of deep bass
through your eardrums. Be warned,
these are not for the faint-hearted.

Gadget review: Klipsch Image X7i in-ear
headphones with 3-button control
The Klipsch X7i headphones are
nearly perfect. Nearly. The sound is
excellent - and in headphones,
that's 90 per cent of the battle won.
Just some blips hold them back.

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Farm Heroes Saga, the #4
Game on iTunes. Play it
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