



Fantasy CEO

Sharpen your business acumen and you could win £10,000

TIMES ONLINE

NEWS COMMENT BUSINESS SPORT LIFE & STYLE **ARTS & ENTERTAINMENT**

FILM **MUSIC** STAGE VISUAL ARTS TV & RADIO WHAT'S ON BOOKS GAMES & PUZZLES

Where am I? Home Arts & Entertainment Music

From The Sunday Times

September 2, 2007

Born to play?

A record producer turned neuroscientist asks whether musical talent is all in the genes



Daniel Levitin

On Songs for Swingin' Lovers, Frank Sinatra is awesomely in control of his emotional expression, rhythm and pitch. Every note he sings is perfectly placed in time and pitch. I don't mean "perfectly" in the strict, as-notated sense; his rhythms and timing are completely wrong in terms of how the music is written on paper, but they are perfect for expressing emotions that go beyond description. His phrasing contains impossible details and subtle nuances. Try to sing along with any song on Swingin' Lovers. I've never found anyone who could match his phrasing precisely.

How do people become expert musicians? And why is it that, of the millions who take lessons as children, relatively few continue to play music as adults? Many people tell me they love listening to music, but their music lessons "didn't take". I think they are being too hard on themselves. The chasm between musical experts and everyday musicians that has grown so wide in our culture makes people feel discouraged, and for some reason this is uniquely so with music.

But, although many people say their music lessons didn't take, cognitive neuroscientists have found otherwise. Even just a small exposure to music lessons as a child creates neural circuits for music-processing that are enhanced and more efficient than in those who lack training. Lessons teach us to listen better and accelerate our ability to discern structure and form in music, making it easier for us to tell what music we like and what we don't like.

But what about that class of people we all acknowledge are true musical experts – the Alfred Brendels, Sarah Changs, Wynton Marsalises and Tori Amoses? Do they have a set of abilities – or neural structures – that are a totally different sort from those the rest of us have (a difference of kind), or do they just have more of the same basic stuff all of us are endowed with (a difference of degree)? And do composers and songwriters have a

EXPLORE MUSIC

- CD REVIEWS
- LIVE REVIEWS
- MUSIC VIDEOS

EDITOR'S CHOICE

- Tributes for Pavarotti, the pop-star tenor
- Keira: Of course I trade on my body
- Ridley Scott: Sci-fi films as dead as westerns

LUCIANO PAVAROTTI 1935 - 2007



“The greatest opera singer of our generation? Almost certainly not” [More...](#)

Richard Morrison

[Post a comment](#)

MUSIC TO REMEMBER



Pavarotti iMix

Listen to and download an exclusive Pavarotti iMix



“Winning a World Cup is not rocket science” Clive Woodward

[Send your views](#)

[OUR PAPERS](#) [AUDIO / VIDEO](#) [CLASSIFIEDS](#)

[RELATED FEATURES](#)

Sponsored by [SEARCH](#)

[MY PROFILE](#) | [OFFERS](#) | [SITEMAP](#)

[MOST READ](#) [MOST COMMENTED](#) [MOST CURIOUS](#)

TODAY

- Madeleine police gain new information
- Tributes for Pavarotti, the pop-star tenor
- Blogger reaction: iPod touch
- B-52 flies with nuclear bombs by mistake



FOCUS ZONE



The Grade

An exclusive collection of the best places in the world to sleep, eat, relax and entertain plus the chance to win one of four luxury holidays

- Fantasy CEO
- Fink Tank Football
- Entrepreneurs
- Fit For Life

- Upfront Rugby
- Galaxy of Stories
- Eco Living
- Your World
- Business Travel

QUICKLINKS

SU DOKU



Now Interactive

Love Sudoku? Play our brand new interactive game: with added functionality and daily prizes.

[Su Doku](#)
[Travel](#)

[Driving](#)
[Podcasts](#)

[Career & Jobs](#)
[Photo Galleries](#)

Proms special:
our picks, plus listings



fundamentally different set of skills from players?

RELATED LINKS

The science of music

It is evident that some children acquire skills more rapidly than others. There may be genetic factors at work, but it is difficult to separate out ancillary factors – with a presumably environmental

component – such as motivation, personality and family dynamics. Similar factors can influence musical development and can mask the contribution of genetics to musical ability. Studies of violin players have shown that the region of the brain responsible for moving the left hand – the hand that requires the most precision in violin playing – increases in size as a result of practice. But we do not yet know if the propensity for increase preexists in some people and not others.

The best guess scientists currently have about the role of genes and the environment in complex cognitive behaviours is that each is responsible for about 50% of the story. Genes may transmit a propensity to be patient, to have good eye-hand coordination or to be passionate, but certain life events – in the broadest sense, meaning not just your conscious experiences and memories, but the food you ate and the food your mother ate while you were in her womb – can influence whether a genetic propensity will be realised or not. So we can only make predictions about human behaviour at the level of the population, not of an individual. In other words, if you know that someone has a genetic predisposition toward criminal behaviour, you can't predict whether he will end up in jail in the next five years. On the other hand, knowing 100 people have this predisposition, we can predict that a percentage of them will probably wind up in jail: we simply don't know which ones.

The same applies to musical genes we may find someday. All we can say is that a group of people with those genes is more likely to produce expert musicians, but we cannot know which individuals will become the experts.

© Daniel Levitin 2007. Extracted from This Is Your Brain on Music: Understanding a Human Obsession, published by Atlantic Books on September 13 at £17.99. To buy at the Sunday Times BooksFirst price, £16.19 (inc p&p), call 0870 165 8585 or visit timesonline.co.uk/booksfirst

HIDE THE FORM

HAVE YOUR SAY

* Your View

Empty text box for user comments.

1000 characters left

* Name and * Email input fields.

* Town / City and Country / State input fields.

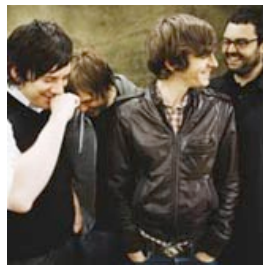
* Required Field

Remember me

Terms and conditions

SUBMIT

FREE MUSIC PODCAST



Pete Paphides chats to London's Athlete

LATEST LIVE REVIEWS

The Police, Beastie Boys, Proms: VPO/Barenboim, Marlena Shaw, Proms: Vienna PO/Barenboim

MERCURY MUSIC PRIZE



Amy Winehouse misses out as Klaxons take the prize

Slide Show

MUST-HAVE POP CDS FOR AUTUMN 2007

- Kate Nash, Amy MacDonald, New Young Pony Club, Cherry Ghost, Rilo Kiley, Interpol, Lethal Bizzle, Unkle, Dizee Rascal, The White Stripes

LATEST CD REVIEWS

Alina Ibragimova: Hartmann, Hard-Fi: Once Upon a Time in the West, Maxim Rysanov: Kancheli/Tavener, Black Francis: Bluefinger, Georg Solti: Mahler

SOUNDS PODCASTS

Select dropdown menu and LISTEN button.

Simon Bolivar YO/Dudamel dazzles Edinburgh



CLASSIFIEDS

CARS, JOBS, PROPERTY, TRAVEL

CARS OF THE WEEK

BENTLEY Continental 6.0 GTC Conv 2007/07 £140,000 South East England

FERRARI 4.3 V10 F1 2007 POA Inside M25

Car Insurance from MORE TH>N with 15% off online

Car Insurance Great deals online

Search for more cars and bikes

Search Ad Reference:

Search input field and SEARCH button.



PRINT, EMAIL, POST TO

DELICIOUS

POST TO
NEWSVINE

POST TO YAHOO!

POST TO DIGG

ALSO IN MUSIC

Sounds: Stephen Fretwell

Download Babyshamble's The Lost Art of Murder

Pavarotti iMix

ALSO IN ARTS & ENTERTAINMENT

Helen Mirren takes stage at Times festival

Live fast, die young . . . or is the rock 'n' roll lifestyle more fiction than fact?

When your number may be up at 27

Where am I? [Home](#) [Arts & Entertainment](#) [Music](#)

[CONTACT US](#) | [BACK TO TOP](#)

[NEWS](#) | [COMMENT](#) | [BUSINESS](#) | [SPORT](#) | [LIFE & STYLE](#) | [ARTS & ENTERTAINMENT](#) |

Sponsored by  **Live Search**

SEARCH

[Contact our advertising team](#) for advertising and sponsorship in Times Online, The Times and The Sunday Times.

© Copyright 2007 Times Newspapers Ltd.

This service is provided on Times Newspapers' [standard Terms and Conditions](#). Please read our [Privacy Policy](#). To inquire about a licence to reproduce material from Times Online, The Times or The Sunday Times, click [here](#). This website is published by a member of the News International Group. News International Limited, 1 Virginia St, London E98 1XY, is the holding company for the News International group and is registered in England No 81701. VAT number GB 243 8054 69.