

Bijlage VWO

# 2014

tijdvak 1

**Engels**

Tekstboekje



### PARENTS AND PEERS

**As a psychologist** very familiar with the research, I think in “Do Parents Matter?” (*Scientific American*, August 2009) Judith Harris is conflating personality and behavior, which are two different concepts. Personality has more to do with genetic traits related to mood and energy (which plenty of research indicates are strongly influenced by genetics). Behavior, on the other hand, depends on context and is guided by laws of behaviourism — that is, reinforcement principles. If parents do (or do not) provide reinforcement for specific types of behavior, you will either see or not see those behaviors. Likewise, certain behaviors will be reinforced in the classroom by teachers.

I teach these basic principles. When people apply them, they work “like magic”. Simple but effective television shows, such as *Supernanny*, demonstrate their power. To suggest that parents “do not matter” or have little influence is beyond laughable. There is no doubt that peers matter, as Harris says — but the research shows they matter more when the parents ignore their impact, do not address their impact or do not take actions to ameliorate negative impact.

**Rhomb99**

*Scientific American*, 2009

### Don't shoot the messenger



1 “**W**ITH iPods and iPads and Xboxes and PlayStations — none of which I know how to work — information becomes a distraction, a diversion, a form of entertainment, rather than a tool of empowerment.” In a speech to students at Hampton University on May 9th, Mr Obama did not just name-check some big brands; he also 2 a long tradition of grumbling about new technologies and new forms of media.

2 Socrates’s bugbear was the spread of the biggest-ever innovation in communications — writing. He feared that relying on written texts, rather than the oral tradition, would “create forgetfulness in the learners’ souls...they will trust to the external written characters and not remember of themselves.” Enos Hitchcock voiced a widespread concern about the latest publishing fad in 1790. “The free access which many young people have to romances, novels and plays has poisoned the mind and corrupted the morals of many a promising youth.” 3 Cinema was denounced as “an evil pure and simple” in 1910; comic books were said to lead children into delinquency in 1954; rock’n’roll was accused of turning the young into “devil

worshippers” in 1956; Hillary Clinton attacked video games for “stealing the innocence of our children” in 2005.

3 Mr Obama is, at least, bang up to date with his reference to the iPad, which now joins the illustrious list of technologies to have been denounced by politicians, and with his grumbling about the crazy theories circulated by the combination of blogs and talk radio. But such Luddism<sup>1)</sup> is particularly curious in Mr Obama’s case, given that he is surgically attached to his BlackBerry, his presidential campaign made exemplary use of the internet, and he has used YouTube to great effect to deliver his message directly to viewers, circumventing the mainstream media in the process. Presumably all those are examples of good information (the empowering sort) rather than bad (the distracting or misleading sort).

4 This distinction, of course, is bogus. Anybody who has ever taken a meeting knows that trying to hold the attention of people with BlackBerrys is like trying to teach Latin to delinquent teenagers. And the devices Mr Obama denounces have many constructive uses. Lectures, language lessons and course materials are among more than 250,000 educational audio and video files available on iTunes. iPads and their ilk may yet turn into a practical alternative to textbooks. Video games are widely used as educational tools, not just for pilots, soldiers and surgeons, but also in

schools and businesses. And Larry Katz, a Harvard economist, suspects that video games and websites may have kept the young and idle busy during this recession, thus explaining the surprising lack of an uptick in crime.

- 5 Mr Obama complained that technology was putting “new pressures on our country and on our democracy”. But iPods, iPads and suchlike are not to blame for the crazy theories — about, for instance, politicians’ birth certificates — that circulate in the blogosphere. People have always traded gossip: the internet just makes it easier and quicker. The culprit is 6, not technology. And new

communications technologies tend to strengthen democracy, not weaken it, as revolutionaries have known ever since Thomas Paine and others used the printing press to argue for American independence.

- 6 At least Mr Obama got one thing right: the idea that educating people is the best way to enable them to adapt to technological change, and use it for good. But technology is not an alternative to education and empowerment; it can, in fact, help deliver them. America’s first web-savvy president should understand that.

*The Economist, 2010*

noot 1 Luddism: a Luddite is someone who does not like new technology and who tries to avoid using it

### Tsunami tip-off

RECENT natural disasters have made it all too clear that we need cheap and simple ways to prepare for nature's wrath. That's the thinking behind a novel approach to tsunami detection, which would use the submarine cables that supply your broadband.

Existing warning systems use pressure sensors on the seafloor to detect the weight of a tsunami in the water column above. Only five countries own such sensor arrays – the US, Australia, Indonesia, Chile and Thailand – partly due to the high cost of installation. This lack of coverage leaves many countries vulnerable to a tsunami strike.

Now a team led by Manoj Nair at the National Oceanic and Atmospheric Administration in Boulder, Colorado, has proposed a cheaper way to detect an approaching tsunami: use undersea telecommunications cables to detect its electric field. Such fields are created as electrically charged salts in seawater pass through the earth's magnetic field.

Computer modelling by Nair's team shows that the electric field generated by the tsunami that struck south-east Asia in 2004 induced voltages of up to 500 millivolts. Their calculations show this is big enough to be detected by voltmeters placed at the end of the fibre-optic and copper cables that carpet the floor of the Indian Ocean. The work will appear in the journal *Earth, Planets and Space*.

The idea has its limitations, though. Cables would not reveal the exact location or direction of the tsunami, and you would have to subtract noise created by fluctuations in the earth's magnetic field, tides and the cable itself to avoid misleading signals.

Still, "it seems promising", says Bill McGuire of University College London. But he points out that it's just as important to set up a system to quickly pass on warnings to coastal towns after a tsunami has been detected.

*New Scientist, 2010*

### Gorillas

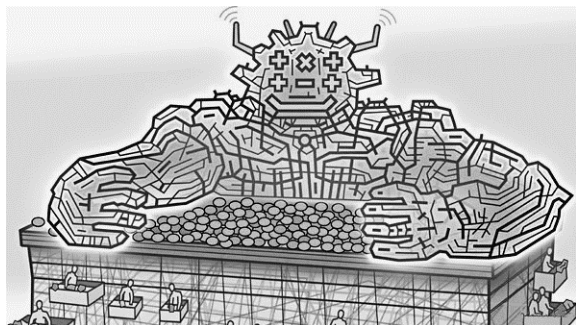
- 1 CAJOLING bored friends to keep playing with you is not limited to humans. A gorilla that wants to continue a game will also try to do this, and will even deliberately lose if necessary. This hints that gorillas may have "theory of mind" — the capacity to attribute mental states to others.
- 2 Richard Byrne and Joanne Tanner of St Andrews University in the UK videoed gorillas at San Francisco Zoo. As well as engaging with a toy and another gorilla, the animals seemed aware of their playmate's interaction with the toy. "The gorillas could encourage their playmates when they were losing interest, or self-handicap if there was a danger of winning the game," says Byrne.
- 3 This is the first time animals have been observed following a playmate's interaction with a third object — a skill picked up by humans at 9 months old. With dogs, cats, lions and bears "the animal wants to win the game, rather than keep it going", Byrne says. "This is different to throwing a stick for your pet dog."
- 4 Because the gorillas seem to be taking account of the thoughts of others, they are showing some theory of mind competence, says Byrne, although they do not pass a standard theory-of-mind test called the false belief test, which looks at the ability to infer another's perspective. Nevertheless, Byrne says that taking another individual's thoughts into account might not be unique to humans.



*New Scientist, 2010*



### The click and the dead



(1) FOR as long as anyone can recall, chess enthusiasts in Cambridge, Massachusetts, have played on large streetside chessboards in the shadows of the stately buildings of Harvard Yard. But even in a place that seems impervious to the passage of time, there is change. One example is an empty space where a much-loved local institution, an independent bookshop called WordsWorth, stood for 30 years. Like small-business owners in other industries, its proprietors held the internet, of which the student-heavy populace of Cambridge were early adopters, responsible for having to shut up shop in 2004.

(2) Everywhere people bemoan the replacement of the local and the quaint by outposts of big, homogeneous chains. But how true is the notion that the internet in particular has hastened the demise of some retailers, and that those it hurt were overwhelmingly small? A new study on this subject by four economists at the University of Chicago looks at three industries — bookshops, travel agencies and new-car dealerships — for answers. They find much truth in the conventional wisdom, but also some solace for those who believe small is beautiful.

(3) In the past economists have paid most attention to the effects of the

internet on prices. These fit snugly into a standard economic model of competition. The internet acts mainly as a mechanism that reduces consumers' costs of acquiring information about products and prices. Before the online age, someone looking to buy a fridge, say, might have gone into one or two local shops, and perhaps rung a few more, to compare prices. The web, however, made it easy to gather more information. Theory suggested that as more and more retailers and customers went online, customers would become pickier. It would become more difficult for a retailer to continue to sell overpriced goods because people would have more knowledge about other options.

(4) 12, e-commerce ought to lead to intensified price competition and through it to lower variation, or "dispersion", in prices. A large scholarly literature has found that this is true. For a real-world example of the effect of lower search costs, think of today's e-reader price wars. On June 21st Barnes & Noble, a bookseller, dropped the price of its Nook e-reader to \$199 in America. Within hours, Amazon cut the price of its Kindle product to \$189.

(5) The new study tests another expected consequence of e-commerce. Intensifying competition should lead not just to price convergence but also to a round of creative destruction.

Companies that are unable to cope with the demands of consumers in the internet age should be wiped out. Those who can, ought to thrive. Efficient firms should enter the market. Using data on internet usage from a representative survey of Americans, as



well as data on the size of firms in each of the three industries in each county in the continental United States, the Chicago economists are able to tease out the impact of the internet on firms in the ten years to 2004, when online shopping first gained a foothold in American life. They can also see whether the effects were larger where more people went online, as one might expect if internet use were the main driver of change.

**(6)** In all three cases the growth of internet traffic and online shopping affected the structure of the industry, not just prices. In general, larger firms grew at the expense of smaller ones. Much as the owners of WordsWorth had surmised, the effect was greatest 15. The shakeout in travel agencies was particularly vicious. After years of holding steady, the total number of agencies fell precipitously, almost exactly mirroring the growth of online shopping. Within the industry large agencies gained at the expense of smaller ones. In the ten years to 2003 the number of travel agencies that employed more than 100 people grew by 60%, from 109 to 174, and the number of tiny ones fell by a third, from 18,186 to 12,865.

**(7)** What of the effect on jobs? Officially overall employment in the travel-agency and bookshop industries fell as a result of e-commerce. In fact, some of the slack will have been made up by the growth of online-only companies such as Amazon and Orbitz. But it is impossible to tell how much of the employment growth at these kinds of firms relates to a particular industry. The cardealership industry, where

online-only retailing was prohibited by law, did not lose jobs. Evidence from other studies suggests that customers gathered more quotes than before and got lower prices, but did not buy fewer cars. The same is probably true of books and airline tickets.

**(8)** Big firms are not predestined to Hoover up all the benefits from e-commerce. The theory suggests that as people become better informed thanks to the web, the businesses that cater most to their desires will thrive. If people want lower prices, then bigger shops and chains, with their economies of scale, may be the ones that do best. But it is equally possible that a small shop meeting a particular need might see its market share expand because more people who want what it provides (cult records or fan fiction, for instance) learn of its existence.

**(9)** The study finds evidence for this, too. Among booksellers, all the smaller categories withered in the internet age — save one. The lone exception was the very smallest, shops with between one and four employees. These appeared to have weathered the storm unscathed: in Harvard Square itself, Curious George, a children's bookshop run by the same people who owned WordsWorth, flourishes to this day. The internet allows customers to see businesses' true colours. The adjustment that follows may be wrenching. But the net effect is one that conforms to what consumers want, whether they admit it to themselves or not.

*The Economist, 2010*

### My brain made me do it

*Understanding how morality is linked to brain function will require us to rethink our justice system, says **Martha J. Farah***

(1) AS SCIENCE exposes the gears and sprockets of moral cognition, how will it affect our laws and ethical norms?

(2) We have long known that moral character is related to brain function. One remarkable demonstration of this was provided by Phineas Gage, a 19th-century construction foreman injured in an explosion. After a large iron rod was blown through his head, destroying bits of his prefrontal cortex, Gage was transformed from a conscientious, dependable worker to a selfish and erratic character, described by some as antisocial.

(3) Recent research has shown that psychopaths, who behave antisocially and without remorse, differ from the rest of us in several brain regions associated with self-control and moral cognition (*Behavioral Sciences and the Law*, vol 26, p7). Even psychologically normal people who merely score higher in psychopathic traits show distinctive differences in their patterns of brain activation when contemplating moral decisions (*Molecular Psychiatry*, vol 14, p 5).

(4) The idea that moral behaviour is dependent on brain function presents a challenge to our usual ways of thinking about moral responsibility. A remorseless murderer is unlikely to win much sympathy, but show us that his cold-blooded cruelty is a neuropsychological impairment and we are apt to hold him less responsible for his actions. Presumably for this reason, fMRI evidence was introduced by the defence in a recent murder trial to show that the perpetrator had differences in various brain regions which they argued 18. Indeed, neuroscientific evidence has been found to exert a powerful influence over decisions by judges and juries to find defendants "not guilty by reason of insanity" (*Behavioral Sciences and the Law*, vol 26, p 85).

(5) Outside the courtroom people tend to judge the behaviour of others less harshly when it is explained in light of physiological, rather than psychological processes (*Ethics and Behavior*, vol 15, p 139). This is as true for serious moral transgressions, like killing, as for behaviours that are merely socially undesirable, like overeating. The decreased moral stigma surrounding drug addiction is undoubtedly due in part to our emerging view of addiction as a brain disease.

(6) So will the field of moral neuroscience change our laws, ethics and mores? The growing use of brain scans in courtrooms, societal precedents like the destigmatisation of addiction, and studies like those described above seem to say the answer is yes. And this makes sense. For laws and mores to persist, they must accord with our understanding of behaviour. For example, we know that young children have limited moral understanding and self-control, so we do not hold them criminally accountable for their behaviour. To the extent that neuroscience changes our understanding of human behaviour — and misbehaviour — it seems destined to alter society's standards of morality.

*New Scientist, 2010*



# Break free of this world wide delusion

**Bryan Appleyard**

1 **T**wenty years have passed since Sir Tim Berners-Lee created the world wide web. From 1989 to 2000 it grew exponentially. Then it crashed, and bright-eyed, cash-burning dotcoms across the world went bust. From the ashes emerged web 2.0, a cult created, engineered and run by Californians. This can be defined in many ways, but its principal features are, as with everything else in California, freedom and personal expression.

2 So, for example, you can publish to the world your every passing thought on Twitter, sneer at MPs on Blogger, display your life on Facebook, sell and bid for goods on eBay. And, all the while, Google, the biggest brand in the galaxy, will be watching everything you do, knowing where you live, logging your preferences and tracking your movements so that it can target its ads at you and only you.

3 Even if you don't indulge, your life has been changed. At every turn you are told to get online and buy. Web 2.0 is in your head and your pocket whether you like it or not. It will change everything.

4 What is wrong with this picture? Well, to start with, it is historically ignorant. "The internet", says David Edgerton, professor of the history of technology at Imperial College London, "is rather passé ... It's just a means of communication, like television, radio or newspapers."

5 One great promise of web 2.0 was that it would lead to a post-industrial world in which everything was dematerialized into a shimmer of electrons. But last year's oil price shock and this year's recession, not to mention every year's looming ecocatastrophe, show that we are still utterly dependent on the heavy things of the old economy. In fact, says Edgerton, we may, in retrospect, come to see coal as the dominant technology of our time. The web, like it or not, uses energy, quite a lot of it, and that will continue to be made with big, heavy, industrial-age machines.

6 24 The key feature of web 2.0 that is currently driving change is its intense focus on the individual. Google's power springs from its ability to advertise not to populations or groups but to individuals. Blogging, tweeting and Facebooking all give the individual the unprecedented opportunity to blather to the entire world.

7 "Why not?" say the Californians. "This is paradise, the individual set free."



The weird phenomenon of flash mobs

8 The first objection to this is that it destroys institutions and structures that can do so much more than the individual. Clive James, who regards the internet as “more of a blessing than a threat”, says that a newspaper story may need “half a dozen qualified financial journalists to put it together, and masses of research that no lonely blogger could possibly do ... This throws into relief the intractable fact that the liberty which the web offers to the individual voice is also a restriction on group effort.”

9 A further objection to the cult’s radical individualism is that it doesn’t have the intended hyper-democratic consequences. Wikipedia, for example, has tackled inaccuracy and subversion by introducing forms of authority and control that would seem to be anathema to its founding ideals. Even Twitter is already coming to be dominated by conventional, non-web-based celebrity – Oprah Winfrey in the US and Stephen Fry over here.

10 The slightly more sinister aspect of this is that excessive individualism leads with astonishing rapidity to 26. The banking crisis may not have been caused by the internet but it was certainly fuelled by the way connectivity and speed created a market in which everybody was gripped by the hysteria of the herd.

11 “There seems to be an inverse correlation between technological speed and intellectual diversity,” observes Andrew Keen, author of *The Cult of the Amateur: How*

*Today’s Internet is Killing Our Culture and Assaulting Our Economy.*

12 Or there is the weird phenomenon of flash mobs. People agree by text message or tweet to assemble in one place and, suddenly, do so. This was originally intended as a joke or art piece designed to demonstrate sheep-like behaviour, but it rapidly became an aspect of cultish libertarianism. It doesn’t work. Flash mobs in Russia are simply prevented by cutting off mobile-phone coverage. Old-world politics is more powerful than the web.

13 And finally, the everything-free, massively deflationary effects of the web may be over. Rupert Murdoch, head of The Sunday Times’s parent company, has said he is thinking of charging for online versions of his papers. The hard fact that somebody, somehow, has to pay for all this is breaking into web heaven.

14 The cult is the problem. I know that this article – it always happens – will be sneered at all over the web by people who cannot think for themselves because they are blindly faithful to the idea that the web is the future, all of it.

15 It is the cultists who threaten the web. They are the ones encouraging dreams of a utopia of the self. They fail to see that the web is just one more product of the biology, culture and history that make us what we are. There are no new worlds. There is only this one.

*The Sunday Times, 2009*

Comment

### An abattoir for dodgy arguments

- 1 This will not be an easy column to write. I am about to put down some ninehundred words in support of a book that starts by attacking me and often returns to this sport. But it has persuaded me that I was wrong. More to the point, it has opened my eyes to some fascinating intricacies in what seemed to be a black and white case.
- 2 In *The Guardian* in 2002 I discussed the sharp rise in the number of the world's livestock, and the connection between their consumption of grain and human malnutrition. After reviewing the figures, I concluded that veganism "is the only ethical response to what is arguably the world's most urgent social justice issue". I still believe that the diversion of ever wider tracts of arable land from feeding people to feeding livestock is iniquitous and grotesque. So does the book I'm about to discuss. I no longer believe that the only ethical response is to stop eating meat.
- 3 In *Meat: A Benign Extravagance*, Simon Fairlie pays handsome tribute to vegans for opening up the debate. He then subjects their case to the first treatment I've read that is both objective and forensic. His book is an abattoir for misleading claims and dodgy figures, on both sides of the argument.
- 4 There's no doubt that the livestock system has gone horribly wrong. It pumps grain and forage from irrigated pastures into the farm animal species least able to process them efficiently, to produce beef fatty enough for hamburger production. Cattle are excellent converters of grass but terrible converters of concentrated feed. The feed would have been much better used to make pork.
- 5 Pigs, in the meantime, have been forbidden in many parts of the rich world from doing what they do best: converting waste into meat. Until the early 1990s, only 33% of compound pig feed in the UK consisted of grains fit for human consumption: the rest was made up of crop residues and food waste. Since then the proportion of sound grain in pig feed has doubled. There are several reasons: the rules set by supermarkets; the domination of the feed industry by large corporations, which can't handle waste from many different sources; but most important the panicked over-reaction to the BSE and foot-and-mouth crises.
- 6 Feeding meat and bone meal to cows was insane. Feeding it to pigs, whose natural diet incorporates a fair bit of meat, makes sense, as long as it is rendered properly.
- 7 But these idiocies, Fairlie shows, are not arguments against all meat eating, but arguments against the current farming model. He demonstrates that we've been using the wrong comparison to judge the 34 of meat production. Instead of citing a simple conversion rate of feed into meat, we should be comparing the amount of land required to produce meat with the land needed to grow plant products of the same nutritional value to humans. The results are radically different.



- 8 If pigs are fed on residues and waste, and cattle on straw, stovers and grass from fallows and rangelands – food for which humans don't compete – meat becomes a very efficient means of food production. If we stopped feeding edible grain to animals, we could still produce around half the current global meat supply with no loss 35: in fact, cut this portion out and you would create an increase in available food which could support 1.3 billion people.
- 9 Fairlie goes on to butcher a herd of sacred cows. Like many greens I have thoughtlessly repeated the claim that it requires 100,000 litres of water to produce every kilogram of beef. Fairlie shows that this figure is wrong by around three orders of magnitude. It arose from the absurd assumption that every drop of water that falls on a pasture disappears into the animals that graze it, never to re-emerge. A ridiculous amount of fossil water is used to feed cattle on irrigated crops in California, but this is a stark exception.
- 10 Similarly daft assumptions underlie the UN Food and Agriculture Organisation's famous claim that livestock are responsible for 18% of the world's greenhouse gas emissions. Fairlie shows that it made a number of basic mistakes. It attributes all deforestation that culminates in cattle ranching in the Amazon to cattle: in reality it is mostly driven by land speculation and logging. It muddles up one-off emissions from deforestation with ongoing pollution.
- 11 Overall, Fairlie estimates that farmed animals produce about 10% of the world's emissions: still too much, but a good deal less than transport. He also shows that many vegetable oils have a bigger footprint than animal fats, and reminds us that even vegan farming necessitates the large-scale killing or ecological exclusion of animals: in this case pests.
- 12 The meat-producing system Fairlie advocates differs sharply from the one now practised in the rich world: low energy, low waste, just, diverse, small-scale. But if we were to adopt it, we could eat meat, milk and eggs (albeit much less) with a clean conscience. By keeping out of the debate over how livestock should be kept, those of us who have advocated veganism have allowed the champions of cruel, destructive, famine-inducing meat farming to prevail. It's time we got stuck in.

Adapted from an article by George Monbiot in *The Guardian*, 2010



New Statesman

### **In sickness and in health**

Michael Brooks

Published 26 March 2010

- 1 When did you last meet someone with polio? It's possible that you never have. Although there are an estimated 120,000 people who have had polio living in the UK, the most recent natural infection with the virus happened in 1982. Such is the power of vaccination.
- 2 Vaccination puts a weakened version of a virus or bacterium into your bloodstream, and your body does the rest. The immune system senses the presence of foreign organisms, and develops antibodies that destroy them. The antibodies are then ready if you come into contact with the full-strength organisms.
- 3 Thanks to vaccination, the world has been smallpox-free for three decades now. Polio is all but eradicated, too. But there is still work to do, which is why it's a disgrace that the Global Alliance for Vaccines and Immunisation (Gavi) is faltering. On 25-26 March, Gavi's partner organisations, drawn from governments, industry and philanthropic organisations, are meeting in The Hague to seek solutions to the alliance's financial woes.
- 4 In many ways, Gavi is a victim of its own success. Since its formation ten years ago, it has gathered vaccine manufacturers, teams that can administer them and those that can pay the bill. The result has been more than 250 million children immunised, five million deaths averted and a huge demand for more.
- 5 It's a demand that Gavi can't meet: current campaigns will leave the alliance \$4.3bn short by 2015. Gavi raises funds by obtaining public financing commitments from governments, the European Commission and the private sector. It can then use these to raise capital.
- 6 Although its founding partner, the Bill and Melinda Gates Foundation, has promised to invest \$10bn more in vaccine programmes over the next ten years, it's not yet known how much of that will go to Gavi. The hole in the alliance's finances is gaping wide.
- 7 Not that Gavi is planning to pass round a begging bowl at The Hague. The meeting is a motivator for its current partners: a chance to refocus on how its vaccination programmes provide the easiest route to meeting the UN's Millennium Development Goals. The hope is that the existing partners will leave

The Hague inspired to recruit more nations to the cause. Of the 20 richest nations, 12 are not yet involved. That includes China and Japan, numbers two and three on the GDP<sup>1)</sup> chart.

- 8 Science has provided the tools to save millions of lives with relatively little effort. There can be no excuse for not putting those tools to work.

*Michael Brooks is a consultant to the New Scientist*

noot 1 GDP = Gross Domestic Product

### Dominoes tumble for school leavers

The school exam season has now passed. The papers and the telly have duly filled with images of young persons squealing and hugging, and older curmudgeons have repeated their ritual moan about the system dumbing down. But this year, there really is a difference: a shortage of higher education places combined with rising unemployment means that many of Britain's youngsters face a bleak immediate future, no matter how well they have done at school.

For 16-year-olds who elect to leave full-time education this year, the outlook is particularly grim. They are competing not only with adults in the jobs market, but also with 18-year-old school leavers who have been unable to find a university or college place. This domino effect is doubly ironic given that this year's exam performance has been stellar. For the younger age group, GCSE grades improved for the 23rd straight year.

But apart from the miseries who say that the exam system has been watered down to produce artificially inflated results, there are more specific doubts about the cascade of high grades. Universities are particularly concerned about the plummeting number of pupils learning modern languages, which have dropped out of the top 10 favourite subjects. There is to be an urgent ministerial review of language learning, which was made optional six years ago. Since then, the number of language students has dropped by a third.

More encouragingly, the number of pupils taking single science and maths courses has surged, especially in private schools, which, as usual, hugely outperformed the state system in exam results.

*The Guardian Weekly, 2010*