

The Winner Effect – The science of success and how to use it

Ian Robertson (2012)

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Achievers

The eminent Harvard psychologist David McLelland studied the drive to achieve over many decades and discovered that the people who achieved the most – the winners, in other words – tended to be those who set up moderately challenging targets for themselves: that is, demanding but attainable. Underachievement is almost inevitable if you set your sights so low that you don't expect to win. But setting them too high can have similarly disabling effects.

Successful people know they have climbed up a difficult ladder, with many small steps, some of them luck, some perseverance and others to do with skill and application. But some people hide the ladder; in the self-satisfaction of their success, they seek to be admired for their greatness and do not wish to see it "tarnished" by the true picture of a thousand small steps up a shaky ladder.

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Intelligence

Some people see their intelligence as an entity, or inherited – a thing over which they have little to no control –, while others see their intelligence in incremental terms.

→ entity theory of intelligence vs incremental theory of intelligence

When confronted to a mistake they've done, the first group would say things like "I'm not smart enough", or "good enough", while the other would say things like "I've not tried hard enough" or "I've not concentrated enough".

A brain-imaging study made by Jennifer Mangels and her colleagues at Columbia University showed that when confronted to a mistake they've done, students from the intelligence-entity group would trigger a much bigger P3a wave, a surge of activity characterizing a confounding experience ("what the hell was that?"), a threat to their ego insofar as they believed their intelligence to be in fixed amount (and potentially lower than expected, from the failure feedback they got). Furthermore, the study analysed the response to helpful feedback (e.g. when the answer to a challenging question was given); the incremental group's brains showed a bigger surge in brain activity linked to grabbing and storing information (encoding), compared to the other group. So, when confronted to failures, one group would learn, whereas the other's egos would suffer.

A study made by Lisa Blackwell at Columbia University, Dweck and others revealed that the children who believed that their intelligence was a thing over which they had no control – irrespective of how intelligent they actually were or whether their starting grades were high or low – showed no change in their grades, whereas the children who thought intelligence was something you could do something about, on the other hand, steadily increased their grades in mathematics.

Some people known for being bright, and believing the intelligence as entity theory, don't actually take risks to put their intelligence to the test, which might jeopardize their belief; what if his hypothetical book didn't sweep the international stage? It would not just be a failure of the book, it would be a failure of a core feature of the self!

The intelligence as entity is a belief (not a hard-wired response) – a handicapping belief about the immutability of one's intellectual abilities. → genetic fatalism / biological predestination

But it can be changed, leading to unfettered achievements – with hard work and perseverance.

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Hormones and the 'winner effect'

Testosterone is a hormone which boosts men's and women's sex drive and makes them more aggressive, and it does so by changing the chemistry of their brains. In particular it boosts levels of the neurotransmitter dopamine, which is a key element in motivation/thrill – in getting clear in our minds what we want, and setting out to get it. Dopamine, then, is a common currency of desire, whether it be for gambling or sex.

Dopamine is the juice of reward, which tells us what to learn and do more of and what to unlearn and do less of. In the competition for survival in the evolutionary struggle, those who paid particular attention to unexpected, as opposed to predictable, rewards were better placed to find new sources of food, water, shelter and warmth, and so were more likely to survive to pass on their genes. Equally advantageous was paying attention to unexpected disappointments – the empty water hole or the fruitless tree – as these would act as prompts to explore and avoid such life-threatening disappointments in future.

Dopamine is made available in the striatum, the brain region where the reward centres are located.

The orbito-frontal cortex part of the brain is important for inhibiting urges (ex: desire to gamble).

Winning changes how we feel and think by racking up testosterone and the dopamine-sensitive brain systems responsible for an action-oriented approach.

A certain amount of dopamine invigorates you, motivates you and gives you that glow of well-being that follows reward and recognition. It also sharpens you mentally, and gives you an appetite for risk.

Scientists at Cambridge showed that testosterone is linked to winning: higher morning testosterone levels in traders predicted higher profits on their day's trading. Testosterone appeared to increase their appetite for risk – and hence their likelihood of snatching a daring profit.

Professor Landau, a biologist seeking to explain the formation and persistence of hierarchies (pecking orders) in animal groups, observed that a hierarchy will appear based on inherent characteristics (features like size, height, concentration of sex hormones like testosterone, etc.) and also if winning a challenge with another animal boosts your chances of winning the next encounter; thereby he discovered the 'winner effect'.

The winner effect has been confirmed by studies involving animals, boxers, chess players, traders, etc.

Hormones and behaviour are intimately linked: not only do hormones shape behaviour, but behaviour also changes hormone levels. Winning causes a surge in testosterone (with effects lasting from days to months, like in between boxing matches), which makes one less anxious, more aggressive, and with a higher pain threshold. Winning also increases the number of androgen receptors of testosterone (in the motivation parts), whose density affects the intensity of the effect of a given quantity of testosterone: the extra receptors suck up the testosterone and magnify its effect on the brain to boost the appetite to fight. The real effect of winning is in physically reshaping the brain, so that the brain behaves like a turbo-charged car that pushes out more power for the same amount of gasoline.

The changes are context-dependent (occur when in a familiar mental landscape, which is affected by space, time, proximity to familiar people, emotions, etc.). Winning (also applies against small, weak fish to begin with) will boost chances when fighting against bigger fish, if the win occurs in a familiar context.

In our daily lives, we are constantly challenging and competing with one another; how we come out of these challenges depends not just on our state of mind and hormonal activity before the event, but also on whether or not we have won in the past. But few of us have had unequal fights which would give us a testosterone-fuelled advantage against tougher opponents.

Siegel's research showed that the chemistry of our bodies is tuned to the physical, social and psychological environment. Winning in a familiar environment will increase the propensity to win. A familiar environment also applies when building tolerance to drugs; an overdose occurs more often in an unfamiliar environment.

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Posture

An expansive posture, which mirrors feelings of dominance and control, helps unwind oneself by turning down the level of the crucial stress hormone cortisol, which is part of an emergency response system the body uses to deal with danger or threat. In the short term cortisol is a useful get-out-of-trouble substance, but high levels over the long term can have bad consequences for the body.

Posture changes mindset, and also affects levels of testosterone and cortisol: a high power pose increases the testosterone level and decreases the cortisol level.

No matter what you feel inside, if you behave as if you feel the way you want to feel, the feelings will likely follow. Then you might enter a positive feedback loop, where other people respond to you in such a way as to confirm or support these initially faked emotions.

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Power

Power is having control over things that the other needs, wants or fears.

Nations and cultures differ in how hierarchical they are – in other words, how steep the social hierarchy is. A scale called the 'power-distance' index, devised by the Dutch social psychologist Geert Hofstede, measures how unequally power is shared across different social ranks. This is a figure that quantifies the extent to which less powerful people in an organisation or society accept that power is distributed unequally – in other words, it is a measure of the steepness of the pecking order as seen from below.

In organisations with a high power-distance index, the relative powerlessness of people who are low down in the pecking order may make them understandably reluctant to give their superiors bad news if they see problems in their organisation.

The higher you are in a steep hierarchy, the more power you have over those below you, whether psychological, financial or physical. Power pumps testosterone into the blood, which in turn – via the winner effect – further inflates your power by helping you win in future. The flip side of that is that the lower down a steep hierarchy you find yourself, the less power you have, and so the less hormonally empowered you are to have the balls to stand up to people above you. This is the reason why, historically, most revolutions have been led by upper- or middle-class people, rather than by those lowest in the pecking order. Meekness and a reluctance to question the boss by testosterone-depleted underlings can have fatal consequences in any organisation – ex. the Chernobyl disaster.

Power makes one egocentric, disinclining to take on other points of view.

Power causes an illusion of control. Even transient activation of ideas of power in the brain (ex. getting people to think about a time in the past when had a little bit of power) increases people's perception of control. Power is such a fundamental motivator that giving them temporary power in an artificial situation changes their outlook on life. It also increases their optimism and their self-esteem.

Power primes the brain into an action mode which helps us to focus on setting goals for ourselves and achieving them – it puts us into a positive mode of thinking where we are oriented towards solving problems rather than worrying about what might go wrong. In doing so, it focuses attention on the goal and away from distractors at the periphery; while this might help in driving forward an agenda, it can also blind the leader to apparently peripheral signals and events which would otherwise be important warning signs. The brain has a cautious area scanning for potential threats, located on the right half of the prefrontal cortex; it has a predilection for noradrenaline, a neurochemical transmitter linked to vigilance, monitoring and response to threat, widening the focus of attention. The detection of peripheral warning signs signalling the complexities and possible downsides of an action is amplified by a serial loser, and overlooked by a serial winner. Powerlessness being a sort of threat, people without power are more inclined to scan the horizon for the threat of unforeseen events that they cannot control.

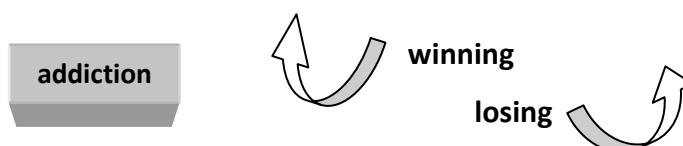
Mario Weick and Ana Guinote of the University of Canterbury showed that power makes people overoptimistic about the time it will take to achieve a goal. This is because power focuses your attention on goals and when people pay close attention to something, it seems closer. It leads to projects where the delivery time is poorly estimated and then overshoot again and again.

Power makes one focus more on the vital aspects and on the big picture, and thereby makes one smarter. Vice versa, people who feel powerless may experience a loss of intellectual capacities. Pamela Smith of Radboud University and colleagues found that power makes you mentally sharper and think in more abstract, and even more creative, ways.

Dopamine is linked to action towards a goal and rewards for achieving it; the left prefrontal cortex gears up towards action, focusing attention towards the goal.

Power is a strong driver of the reward system, causing testosterone surges which in turn trigger dopamine release. Former US Secretary of State Henry Kissinger commented that power is the greatest aphrodisiac. Oliver Schultheiss and his colleagues at the University of Michigan have shown that men and women with a high need for power (and not power on its own) have sex much more often. And priming men unconsciously with power-related words increased their sexual appetite.

Power (or power need)	Less power (or power need)
Perception of being in control	Perception of not being in control
Action-oriented	Caution-oriented
Focus on the goal	Vigilance, monitoring, scrutiny
Motivation, ambition	Restraint
Taking decisions unilaterally	Concerted action, delegation, seeking consensus
Confidence	Stress
Effect of winning: Cortisol (stress hormone) --- Testosterone +++	Effect of winning: Cortisol (stress hormone) +
Effect of losing: Cortisol (stress hormone) +++	Effect of losing: Cortisol (stress hormone) +
Dopamine Left side of prefrontal cortex	Noradrenaline Right side of prefrontal cortex
Egocentricity, less empathy	Empathy
Entitlement; making judgements about other people's behaviour. Advocate moral principles for others; exemption for own behaviour	Outcome-based decisions (the ends justifying the means, which can be morally questionable) for situations involving others



A person's need for power is a pretty important factor in shaping how they conduct themselves, yet it is not something that we consider when thinking about others – instead, we look at whether someone is introverted or extraverted, anxious or emotionally stable, etc. Some individuals will strive to dominate – and there is a chance they may not even be aware of this; this is a deep-seated part of our personality that we are mostly unaware of.

→ Thanks to the winner effect, the mere fact of winning primes us to be winners in the future. More than that, power reshapes our brain to make us smarter and more focused, thus boosting our power and opening up for us opportunities for even more success.

But some of us have a greater sensitivity to power and are physically and psychologically changed more by it.

Women on average are motivated by power to the same degree as men, and respond to competition and power in very similar ways to men. But it seems that men are more power aware: they pay attention to signs of power more than women do, and they remember more facts about powerful than less powerful people, while women do not show this selective memory.

The cichlid fish's changing behaviour is a result of a change in circumstances, of his being lucky enough to get territory – and this status then transforms him physically and psychologically. Being given power produces similar changes in human beings – with more variability from person to person.

A key part of the context is the role you are given. Many people, for instance, "rise to the challenge" when promoted to a position of responsibility, and, like the cichlid fish, will change physically and mentally as a result.

p power and s power

p power is ego-driven; s power is altruistic

Women are on average as motivated as men to have an assertive, personal impact on other people. But they are more motivated to control others for the wider benefit of the community or organisation; they need to have impact for altruistic reasons (s power – society), rather than for themselves (p power – personal), as shown by Leonard Chusmir and Barbara Parker of the University of Colorado. Individuals tend to have both p and s power (the split does not affect the need for power in general / impact); those who have some s power do not have the surge of testosterone, dominance and aggression which results in a continually growing appetite for power that can never be achieved. The s power need balances the p power need, leading to a healthy psychological relationship with power.

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Stress

Stress triggers the flow of the cortisol hormone into the blood. Cortisol is part of animals' body's emergency response system, with the aid of adrenaline and other substances, helping get them out of trouble when threatened and hence stressed. Cortisol is the first-line stress hormone, pumping glucose into blood and brain to induce faster responses to an emergency. Adrenaline is also triggered by stress, quickening your pulse, raising your blood pressure, sucking blood from your innards out into your primed-for-action muscles and

generally making you fired up and ready to jump. Cortisol also changes your immune system's operation and suppresses your digestive system. You also feel like you have to go to the bathroom – unburdening your body of unnecessary weight makes it easier to escape the bite of a dominant male.

More importantly, parts of the brain are disrupted by cortisol. In particular:

- the memory centres, deep in the hippocampus – leading to altered memory of the details of a stressful event
- the inhibition system, in the dorso-lateral prefrontal cortex (the right outside surface of the frontal lobe just under the right temple), associated with self-monitoring, self-awareness, involved in planning what you are going to say, listening to yourself as you say it, and stopping yourself from saying something inappropriate – affecting the ability to act and do things properly. When under stress, one might say things that he/she might later regret. → stressed, un-braked brain running free
Drinking alcohol is one of the commonest ways of dulling self-awareness.
This explains why many people burble star-struck nonsense when they encounter someone famous or high-status. They are in essence rendered temporarily drunk by the brain-dulling effects of encountering someone of high status.

Cortisol in the short term is usefully energising, but when chronically secreted into the blood over the long term, it can have very damaging effects on the body, including the cardiovascular system. Chronic high levels of cortisol also shrink cells and their connections in certain areas of the brain.

→ long-term corrosive effect of cortisol, reducing life expectancy – resulting in impaired memory, reduced problem-solving and planning abilities

On the contrary, winners have less stress. Statistically, winning has a life-extending benefit; fame and recognition seem to affect the bodies and brains of the winners in a remarkable way. Winning an Oscar or a Nobel Prize lengthens the recipients' lives (and it has been shown that it's not because of the marginal financial wealth that comes with it).

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Control

The ability to exert control (ex: over the timing and flow of one's work, such as being able to refuse or postpone certain tasks), or the lack thereof, directly affects blood pressure, pulse rate and blood cortisol levels (stress).

For individuals on the same status or grade at work (at all ranks), those who feel they have more day-to-day control over the timing and rate of their work – irrespective of job title – have lower blood pressure than their colleagues of the same status who have less control.

Ex: Like the low-ranking baboons who managed to have control over their sex lives by making initially platonic friendships with the dominant baboons' mates, Clare was able to control her workload through various interpersonal strategies and hence avoid one of the toxic elements of low status: loss of control.

Lack of control leads to stress-related wear and tear, and may trigger “learned helplessness”, a state of apathy, depression and anxiety (which entails that even when the individual would have control, he/she wouldn't take the opportunity to improve something).

Brain cells shrink under the shock of super-high doses of cortisol (ex: induced by torture), which are poisonous to the brain at high levels and the birth of new brain cells in the memory centres is curtailed.

The key is not so much to have actual control than the belief that one has control over his/her life in general.

Also, if an individual has the belief that he/she has control, he/she will create leverage by acting in such a way as to create actual control. Those who hold the reigns of power in an organisation may have got there because their self-belief in their power to control events had them promoted.

Just as the San Diego SERE (Survival, Evasion, Resistance and Escape) trainees divided into those who broke and those who did not, so the Montreal research volunteers varied in how stressed they were in the mental-arithmetic-with-criticism test. The researchers measured their stress by how much cortisol was pumped into their bloodstream; those who triggered a lot more than the others were the ones who felt less in control of their lives.

Researchers at Montreal Neurological Institute found that there was a strong linkage between the size of the memory centre (the hippocampus) and how much one feels he/she has an internal control over his/her life.

Oscar, Nobel-prize winners get more control, so have less stress and lives longer.

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Social threat

Social-evaluative stress (SET) is the most widespread and potent form of stress. In all animals, including humans, social threat – the feeling of being looked down upon or rejected by others – has significant effects on the immune system, whereas sadness, anxiety, general stress and depression have fewer effects.

At the heart of the feeling of shame is a belief that others will judge who you are as inferior or inadequate.

Winners of recognised prizes such as Oscars or the Nobel prize gain protection from threats to the self, and therefore from the murderous stress generated by that threat.

The sociologist Max Weber talked about the "unprecedented inner loneliness of the individual self" that the growth of Protestant Christianity caused. The inner loneliness makes feeling in control important for my mind and body. In the 21st century, the 'me' is no longer fastened within the mind of a group of people. No longer is there a stable group of people in whose mirror gaze one's self is fixed. Instead, we move about, and the sustenance of that 'me', which is the sum of other people's views of me, becomes something I have to actively manage and manipulate. What else can we do in such turmoil but to create defences – to build self-esteem as

a protection against the threat? But that self-esteem can be fragile and threats to the vulnerable, exposed self, stripped of its secure place in a group mind, are thus among the most stressful experiences that we can have as human beings. What's more, these threats are magnified further the less control we have over them. So much of my life is spent trying to engineer the good opinion of others and to avoid negative judgements of *me*. If that 'me' is threatened, my body will spew out more stress hormones and rust up my immune system more than it would for almost any other stress.

The reason we seek control so much, and why it is so good for our mental and physical health, is that control allows us to protect ourselves.

If I am a small contributing part of a single greater reality, then my self is less exposed and threatened: the greater reality of the big wheel will keep on turning without me, and so, in a sense, my self continues insofar as the greater reality continues. As a small part of a greater reality, my individual self is less exposed to threat.

There are large benefits in fostering a work culture where individuals feel part of a greater project.

Judging whether we are getting properly rewarded or not can only really be done by comparing ourselves with other people.

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Safety signals

Safety signals (ex: the all-clear siren following a bombing raid, or coming back home) don't just predict the absence of stress; they act as antidotes to some of the damaging effects of stress. They shake off fear, depression, despair, and even make brains generate new cells in the key memory centres. They also trigger the release of an important chemical in the brain, Brain-Derived Neurotrophic Factor, or BDNF, a sort of brain fertiliser that helps foster new connections in the brain. Safety signals then actually inhibit stress and its toxic consequences.

Winning an Oscar, a Nobel prize, or winning in general represents one big safety signal for the fragile self – a powerful, near-everlasting 'safety signal for self', a sort of lifelong insurance policy that protects 'me' against the terrible stress of other people's negative evaluations. Winners live longer because of the remarkable protective effects of this status on their lives and sense of self.

Money's effect on the brain reveals the crucial human need for the approval of others. Keise Izuma and colleagues from the National Institute for Psychological Sciences in Japan showed that money and status switch on much the same dopamine systems, as for winning a bet or a sexual caress. Because of its dopamine-boosting effect in the reward system, money works in making someone do things either that he/she never thought he/she could do, or that he/she could not be bothered doing before, much like the way the prospect of sex with a desirable partner works.

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The downsides of winning

The visceral rewards of earthly pleasures – winning among them – are routed through a central area in the brain, a sort of reward exchange. An overloading of this system can lead to addiction to these pleasures, like the addiction to drugs. In a disrupted system, a dopamine-mediated craving can never fully be satisfied; a vicious circle of tolerance is created, in which ever-higher levels are needed to achieve the same 'high'.

Power can corrupt because it acts as a very powerful drug which can, in high and repeated doses, become addictive. In addition to its addictive characteristics, its distorting effects on the human mind have caused the deaths of hundreds of millions of people because of power-addicted, dopamine-disregulated dictators. Dictators are made mentally sick by the overdose of power which overwhelms their brain chemistry. That is why there can be no such thing as a benevolent dictator.

Cognitive dissonance inevitably kicks into play in their brains' dACC and then the brain tries to balance out the inconsistency by generating the contempt for their underlings.

Leaders must have power, but they have to feel constrained and accountable in their use of it.

Winning can distort judgement, because of overconfidence.

A dopamine reward system primed by power blinds to the viewpoint of others, permitting insensitive behaviour. Feelings of power, even temporary, make people poorer at decoding other people's emotional expressions, care less about what others think, make them egocentric and lacking empathy – as shown by Dacher Keltner and colleagues of Stanford University. Deborah Gruenfeld and colleagues at Stanford University found evidence that if we arouse power feelings in otherwise ordinary people, they begin to see others as objects, as a means to their ends. And both ordinary people primed with power and high-level business executives viewed others in terms of their usefulness to them rather than in terms of their non-utilitarian personal qualities.

Joris Lammers and colleagues of Tilburg University found that power, whether unconsciously primed in the mind or actually exerted over other people, made people much more likely to advocate rule-based decisions (based on moral principles) than outcome-based decisions (the ends justifying the means, which can be morally questionable) for situations involving others. Power makes people feel entitled and hence more comfortable with making judgements about other people's behaviour. But for situations involving themselves, it was the contrary: people in power would be less likely to choose the rule-based judgement and more likely to choose the ends-justifies-means, outcome-based judgement – and they would also act accordingly, in defiance of the rules applying to others. So power can blind to making the sort of judgement of one's own behaviour. When self-interest comes to the fore, power primes selfishness, hypocrisy and a mindset of special-case exceptionalism. → power-triggered entitlement, exceptionalism and hypocrisy

A sense of exceptionalism and entitlement may even be seen as desirable by some boards of corporations – suggesting the possibility of buccaneering entrepreneurialism and capacity for profit-generating risk.

Thoughts of money tend to foster self-centredness, individualism.

The prospect of a big reward, or a very large desire to win can lead to a surfeit of dopamine which can interfere with the ability to do things well – which may end up in actually losing – as shown by Christopher Frith and his colleagues from University College London.

S power (see *p power and s power*) acts as a sort of coolant on the potent but sometimes destructive effects of unmitigated p power, and women's minds have more of this coolant (on average; many women still have high p power undiminished by s power, and conversely, many men have high levels of s power). What's more, s power's dissolving effects on testosterone very probably diminish the most virulent of the dopamine surges that can lead to addiction to power: this may be the reason why all the notorious and massacring dictators of the world have been men.

The collapse of Enron can be explained in the following way: a group of p-power-driven people, mainly men, whose testosterone levels were racked up by repeated market 'successes' of an escalated share price, created and lived in a culture of extreme 'millionaire factory' individualism. The combination of money-primed individualism, judgement skewed by testosterone-triggered dopamine and risk perception dulled by the biological consequences of the winner effect meant that their attention was focused on narrow goals – overwhelmingly the share price – at the expense of any real consideration of the actual business of supplying energy. The rewards-seeking part of their brain may have been fired up by a goal focus, whereas the more cautious, vigilant, avoidance brain areas stayed correspondingly less active. Power had sharpened some parts of their brains, and dulled some others. Their judgement was corrupted by power, which made them less able to see things from other people's point of view, and more vulnerable to applying different standards of conduct to themselves than they did to others. The absence of s-power coolant in their psychology meant that their brains were exposed to much higher levels of raw testosterone – and hence to repeated surges of dopamine coursing through the reward parts of their brain.

Power makes bullies of people who feel inadequate in the role of boss. People who lack the confidence or competence in a powerful position feel their ego is under the threat of public humiliation and failure, so react aggressively in defence of the ego – venting their frustration on their underlings, who lack the power to strike back.

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Misc

priming: exposure to words of a particular connotation makes people behave in the way of the connotation (ex. like old people), in terms of walking speed, memory, etc.

internalised glass ceiling: those prejudiced against by another group may behave in such a way that fits into the prejudice – not only are they cut off from the opportunity to be successful by the attitudes and beliefs of other people, they also shackle themselves by unconsciously adopting the very same negative attitudes.

Groupthink: conformity is a huge factor in our behaviour, and individuals may do and tolerate almost anything if their seniors advocate or condone it.

The Ben Franklin effect: ask a small favour first, to get something bigger later (ex: ask for a few small coins to make up the price of a coffee). It creates a disposition to say yes and do things for you (ex: agree to swap desks).

Ben had problems with the animosity of a rival legislator. To bring him round, he asked him a favour (to borrow a rare book he owned); his attitude changed towards him, and they gradually became friends.