

The ethics of faulty thinking

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Every day in our dealings with others and, especially, on television we see examples of faulty reasoning and biased judgement. This includes people who persistently believe and support idiotic ideas, and people who persistently exploit the gullibility and thinking weaknesses of others. Most of us would like thinking to be always in pursuit of truth and fairness, but that's not what we actually experience. Politics, marketing, and company reports are some familiar hotbeds of damaging daftness and deception.

How serious is this? Should we overlook it as just normal human behaviour? Or should we try to reduce it, hold perpetrators to blame, clarify what is not

acceptable, and educate our society to do better?

This article considers:

- What are the serious types of faulty thinking?
- What factors determine how ethically serious faulty thinking is?
- How can we identify unethical faulty thinking that should be tackled?
- What can we do, as a society?
- What can we do, as individuals?

The serious types of faulty thinking

The types of faulty thinking I will focus on here are **littering**, **negligence**, **assault** (on reason), **corruption**, and **fraud** as understood in ordinary English. This is not a complete collection.

The reason for using these strong words is that they are justified, as you will see from the many examples discussed later in this article. These examples include situations where dishonest, exploitative actions are usually tolerated as normal behaviour. These are situations where we should consider changing our habitual response and take a more ethical position.

The reason for putting all these five types of thinking under the heading of 'faulty thinking' is that, in a particular situation, it may not be obvious at first which type of faulty thinking is involved. For example, what at first seems to be just

casual intellectual littering might turn out to be corruption once the true motive is understood.

The types of faulty thinking are presented in roughly ascending order of deliberateness. We start with actions that are harmful but unthinking and move up to deliberate lies and tricks.

Littering

According to the Free Dictionary (online), littering is making 'untidy by discarding rubbish carelessly.'

Most litter, in the usual sense, is related to smoking and fast food, but dog faeces are a particularly unpleasant form of litter. Where I live, littering can be punished with a fine but this is rarely done and if you stop and look carefully you can find litter in almost any public place.

Litter is unsightly, can attract vermin, harms wildlife, and is expensive to clear up.

An area that is littered tends to attract more litter because it leaves people feeling that littering is normal and acceptable in that location (Keizer et al 2008). Litter also encourages people to cheat.

Intellectual littering comes in various forms.

Simply stating well-known falsehoods, confidently, or using ideas that have been discredited, is a very common form of intellectual litter. Here are three examples.

1999. Back in 1982 Prince sang 'So tonight I'm gonna party like it's 1999', making this the earliest example of the millennium mistake that I know of. The millennium mistake was celebrating the end of the second millennium a year early due to fuzzy thinking about dates and numbers.

The first year AD (or CE if you prefer) was numbered 1. That means that the last day of the 2000th year was 31 December 2000, not 31 December 1999 as Prince and millions of others thought.

Even before 2000, many people knew about this and yet, by the power of endless repetition (perhaps helped by impatient desire for a party), the world celebrated a year early.

GDP (Gross Domestic Product).

Another example that is more current is the continued focus by television news reporting on GDP as if it is the only important measure of economic health and without any reference to its well-known issues. GDP can be 'improved' by a severe winter or by going to war. Severe flooding of homes is good for GDP as long as people aren't prevented from working for too long, thanks to all the redecorating and rebuilding needed.

Body language. For a final illustration, consider the well-known fact that only 7% of what we communicate is through the words we say while the rest is conveyed by body language. It's not true, obviously. It's absurd. Just imagine watching television news with the sound off. Body language would tell you very little. The supposed 'fact' is a misunderstanding and a misrepresentation of two studies by Albert Mehrabian (Mehrabian and Ferris, 1967, and Mehrabian and Wiener, 1967).

People who repeat falsehoods and unhelpful concepts unknowingly are just spreading the litter, but people who know the issues, or should do, but carry on littering anyway are behaving much worse. It's as if they have an empty beer can in their hand, look down at it, think for a moment, and then simply drop it on the ground.

Vague, meaningless, illogical language is another form of intellectual littering. Here

are the first two sentences of the abstract of the first journal article I found in PMLA, a journal of the Modern Language Association (Wolfson 2016):

'Keats's tracks into the nineteenth century angle toward a "modernism" often denied at his expense—yet with latent identifications. In relations of past and present, figural identifications may register in nuances different from conscious allusion or the psychodramas of influence, ravages and resistance, hauntings and felt belatedness that issue in self-interested misreadings.'

It carries on in the same style and is typical of this journal. This is only literary criticism, so perhaps it does not matter so much, but poor writing along these lines has also become more common in writing about management.

This next example is from the first paragraph of the first article I opened in a recent issue of the British Journal of Management (Safavi and Omidvar 2016).

'Adopting this perspective, authors have closely examined how interactions between ostensive and performative aspects of routines result in change (or stability) by discussing the role of agency in altering performances vis-à-vis structural features crystallized in routines in principle.'

Knowing what 'ostensive' and 'performative' mean only makes this example worse. When language is misused like this truth doesn't stand a chance.

You can find more examples of littering on most internet discussion forums including Twitter and the comments under videos on YouTube.

A lot of this material is jokey or trading insults, usually with swearing and usually saying that opponents are stupid, brainwashed, or duped.

Here is an example of a slightly longer than usual post that is positive about Trump. I have preserved the exact spelling and punctuation:

'God most of you are absolute idiots. WWIII has just been avoided don't you understand that??? Russia and China were preparing for WWIII if Hillary got in power! Straight away Putin has come out saying now Trump is in power they can work together and the same with China. So Trump has instantly brought peace between three major countries in the world just by not being Clinton. Some of you need to actually read and learn some economics instead of getting all your info from youtube and twitter'

Here's a typical exchange. The first posting is an insult:

'I thought trump was a joke when he ran but now it's obvious that US citizens have no clue what a joke is'

The response:

'but they know what a criminal is. Well at least half of them do...'

And also:

'I want to see Charles Barkley¹ in charge of race relations in this country. There is no such position of course, but he believes in an adult being an adult, the opposite of the race victim industry'

What is interesting about this exchange is that it is so far from any verifiable facts that no progress can possibly be made. This is just a sort of online shouting match, not a conversation.

Here are two postings on abortion:

¹ Charles Barkley is a former professional basketball player famous for trying to spit on a fan who was racially heckling him. The spittle landed on a young girl nearby instead.

'the state doesn't tell you what porn to jerk off too so they shouldn't be able to tell a woman what to do with her body'

'a fetus is a human, killing humans is illegal'

Both of these try to reduce the complex issues around abortion to a single argument and both fail. The first fails because it ignores the consequences of abortion for the foetus and for other babies the woman might have later in life. The second fails because it is the very legality of abortion that is being debated, so reference to the law is not conclusive.

In summary, types of intellectual littering include the following:

- Simple assertions well known to be false or using concepts or inferences well known to be fundamentally flawed.
- Assertions using emotive language or with misleading connotations.
- Relaying the questionable assertions of others.
- Language that is vague or confused.
- Trying to focus a complex issue onto just one point, even though that point is not decisive.

Intellectual littering like this helps to make faulty thinking seem normal and acceptable. It also provides somewhere for more serious forms of faulty thinking to hide.

The intellectual litter bug saves a bit of time and energy while society loses in a general, diffuse way. The next form of faulty thinking involves loss to a specific person or group as a result of carelessly poor thinking.

Negligence

According to the online Oxford English Dictionary, negligence is 'failure to take proper care over something.'

For example, suppose a company collapses and it emerges that top executives had been falsifying the accounts for two years. The shareholders get together and take the auditors to court, showing successfully that their audit was lazy and incompetent. The auditors' conduct is a familiar example of negligence.

Now, as an example of negligent thinking, imagine that a property developer is considering buying a derelict theatre with the intention of refurbishing it. She asks a local expert on theatres what audiences might be expected for a theatre in that location and the expert makes some estimates. The developer puts those numbers into her spreadsheet along with her guesstimates for refurbishment costs. She later uses those estimates to persuade investors to lend her money and to persuade the local council to make some concessions she needs for her scheme.

In reality the old theatre closed because local people were not interested and the theatre expert's estimates were biased heavily by his desire for a theatre to open in the area. This source of bias should have been obvious so the developer was negligent in accepting those estimates as she did. (You may think this is just the start of her costly carelessness.)

She might argue that property development is inherently risky, that anyone can make a mistake, that she has learned from it, and that she cannot be expected to be a psychologist or mind reader. These are inadequate excuses. Property development is inherently risky and that's why property developers should be expected to be experts in estimation, including dealing with uncertainty and bias. This is especially true for larger scale projects where other investors and stakeholders are involved.

Negligence is not deliberate but arises from failing to take the care you should have, as a result of which someone else loses out unfairly. The level of care we expect depends on a number of factors. The specific types of faulty thinking that might be involved include these:

- Not bothering to promote good thinking and gathering/use of evidence.
- Attending to and being influenced by information or arguments without examining them carefully.
- Using a judgment that is important without trying to prevent or reduce bias, in a situation where bias is to be expected either because it is obvious or because scientific research has shown that bias is common.
- Not acknowledging and adapting to new information and/or effective reasoning in a situation where you could have done so.

Examples of this kind of negligence include the following:

- An advisor to government (e.g. on education) making recommendations that are not well founded, but which are enthusiastically taken up and implemented by government ministers who like the general direction and do not bother to consider the details, such as evidence of effectiveness.
- Risk analysis for an important project based on asking people in a workshop to decide if the 'impact' of a risk should be classed as 'high', 'medium', or 'low', where none of the quoted terms are defined, no evidence is required other than the judgements of workshop participants, and no techniques for bias reduction are used.

Assault (on reason)

According to the online Oxford Dictionary, an assault is 'a physical attack.' Here we are interested in intellectual or emotional attacks on sound reasoning and the use of evidence. This is often in pursuit of some other goal, such as protecting a fraud or deflecting attention from corruption. The idea is to neutralize what would otherwise be damaging arguments and evidence.

This is done by asserting that evidence and reason are not relevant or that they are just cultural preferences and that other logics are just as valid. This is obviously a frequent choice for discussions about religion and morality, but has also been used in mathematics and sociology, for example.

This may seem like an extreme ploy, but examples of it include some frighteningly common behaviours, such as:

- asserting that the reason and evidence provided by an opponent are merely opinions;
- implying that rationality is solely concerned with money and so invalid or irrelevant;
- portraying logic, reason, or rationality as cold and unconcerned with emotions, so invalid or inappropriate;
- presenting belief (without basis) as noble and all challenge to such belief as morally or socially wrong;
- invoking the need for ethnic or religious tolerance as a reason for suppressing reasons or evidence;
- mocking people who use reason as nerds, lacking in friends or social skills;
- describing correct, relevant points as 'pedantic' to weaken their effect;
- portraying arguments that are correct and efficient but take some effort to understand as over-complicated and showing that the reasoner is out of

- touch, unhelpful, or deliberately confusing;
- implying that a discussion about truth is some kind of negotiation and so compromise is needed and failing to compromise is being dogmatic or extreme;
 - acting as though a discussion is a popularity contest by judging who has 'won' the argument by who got the most noisy support from people listening; and
 - enthusiastically promoting research that seems to show that 'intuition' has almost mystical powers and that 'going with your gut' is generally superior to careful, competent thought.

Assault (on reason) attacks the very foundation of valid, useful thinking. This makes it more serious than littering.

Corruption

According to the online Oxford English Dictionary, corruption is 'dishonest or fraudulent conduct by those in power, typically involving bribery.'

For a familiar example, imagine that a county council awards a lucrative contract to a company that did not make the best bid. Later it emerges that the chairman of the committee that made the decision for the council was secretly paid a bribe of £30,000 by the company. That's corruption and we would expect to see the police involved.

For an example that involves dodgy thinking, imagine a committee that is finalising an international standard for a particular type of electronic component. In the standard is a table of numbers giving key parameters for the device. These are thought to be the values that maximise efficiency and were calculated using a mathematical model. However, at the last committee consultation stage,

when the only remaining changes should be small and cosmetic, a national standards committee sends in a comment showing clearly that the parameter values are wrong because of a mistake in the mathematical model. Several of the numbers should be different and correcting them will improve efficiency by just over 5%.

Members of the international committee should, in good faith, recognize and correct their mistake, but that would be embarrassing, the work is quite time consuming and might introduce a delay, and several of them work for companies that have already started designing and even advertising products that conform to the incorrect values in the table. Acknowledging the error and making a correction would lead to personal loss of face and extra work.

When the comment is discussed by the international committee the first person to speak says 'This comment is really outside the scope of a final stage consultation. It has come in too late and we cannot consider it.' Other members pick up on this lifeline and begin to add their own excuses for not taking action, including vague reasons for doubting the comment is correct. Within a few minutes the whole matter seems debatable and unimportant so they reject the comment.

This seemingly inconsequential act of corruption (deliberately abusing their power for personal gain at the expense of others) could lead to inefficient devices being in service for many years, amounting to wasted energy worth many millions. In terms of consequences, it could be huge, but we would not expect the police to be involved in a case like this. Perhaps we should.

Corruption is deliberate and intended to result in unfair gain at someone else's expense. The specific types of faulty

thinking that might be involved include these:

- Failing to acknowledge and adapt your position to relevant evidence and/or effective reasoning, and maintaining the position that you consider to be in your interests.
- Blocking or undermining good thinking or evidence that might otherwise threaten your preferred position.
- Avoiding being exposed to information or reasoning that ought to lead you to change your position.
- Attending to and being influenced by material without examining it carefully because you think careful examination would make it less favourable to your position.
- Using biased judgements.
- Giving deliberately faulty or deceptive arguments to defend against relevant evidence and effective reasoning that would weaken your position.

Examples of this kind of corruption include the following:

- Politicians continuing with big projects long after they should have been cancelled because they hope to avoid being blamed for a wasteful failure.
- Persistent, clear-cut errors not corrected in important publications (e.g. official guidance, standards, regulations) that are online, or periodically revised, and so could be corrected.
- Failing to acknowledge and adapt to correct objections made in consultations (e.g. on laws, regulations, official guidance, standards) on the grounds that too few people made the point or that a solution to the clear-cut fault identified was not provided.

Fraud

According to the online Oxford English Dictionary, fraud is 'wrongful or criminal deception intended to result in financial or personal gain.'

For example, suppose a wealthy businessman sets up a company he calls his 'University' and through it offers courses in business, promising students a high level of personal tuition from experts in return for their large fees. In reality the 'university' is a scam; they receive poor tuition from people who know very little and the organization is not a university in the accepted sense. This is a familiar picture of old fashioned fraud and we would expect a legal case, probably with the police involved.

Now, as an example that is more subtle, another businessman is CEO of an airline and considers himself to be excellent at 'managing messages'. He frequently appears on television, is often interviewed by the media, and loves to make presentations to shareholders and schmooze with analysts. He consistently finds the most positive way to frame every issue, mixing fact with fiction. He is particularly good at making up reasons why the company did things it did, promising and predicting good things in future, and subtly rewriting the past. As a result of his skilled spinning he stays in his job for two years longer than he otherwise would have. This is also deliberate deception for personal gain, so this is also fraud, but it's not one where we normally see legal cases.

This has little or nothing to do with the money involved. Suppose the fake university gained 200 students before it was stopped, taking £1.6m but paying out wages to its under-skilled staff, and paying some of its bills for publicity and premises, leaving a profit of £1m. That would be a serious matter.

But suppose the airline CEO was paid £950,000 a year. His extra gain amounts to £1.9m, and there are also losses to a large number of shareholders and customers deceived in small ways by his spin.

The rise of YouTube has spawned a new form of fraud: fake news. These are YouTube 'channels' offering videos presented as news but actually just created without real journalism to attract visitors who agree with the viewpoint expressed by the channel. The fake journalists then collect money from advertising. The 'news' stories might be based on fact, or not, and are presented in a strongly partisan way.

Fraud is deliberate, involves deception, and is intended to result in unfair gain at someone else's expense. The specific types of faulty thinking that might be involved include the following:

- Exploiting others using trick arguments, presenting data in a misleading way (even subtly), or exploiting typical biases.
- Giving deliberately faulty or deceptive arguments to defend against relevant evidence and effective reasoning that would weaken your case.
- Blocking or undermining good thinking or evidence that might otherwise prevent the deception.
- Presenting information, judgements, or reasoning without careful examination because you think careful examination would weaken your position.
- Using biased judgements.

Examples of this type of fraud include these:

- Deceptive arguments, language, and images used in advertising.
- Spin by politicians.
- Spin by company directors defending their performance to investors.

- Managers and salespeople making claims about their proposals that are not objective and are cunningly crafted to get agreement.
- Managers manipulating measures of performance to present a falsely positive view of their achievements.

What makes faulty thinking more or less serious?

Here are some factors that are relevant to deciding how ethically serious a fault is, followed by some that are not.

Intention: As with most forms of wrong doing, intention is important. Faulty thinking is worse if it's deliberate.

Marketers and politicians who use focus groups and testing to help them select things to say that will be most persuasive because they exploit the weaknesses of our thinking are doing it very deliberately and that makes their actions worse².

Lack of intention to do wrong is not a complete defence, however, because a person can be a faulty thinker due to carelessness. That carelessness might even be motivated by self-interest, as when someone feels that careful thought is likely to reveal problems with their work and so they avoid careful thought.

Further, a person who goes through life without ever learning about bias and critical thinking, despite the abundance of information about these and our society's tendency to praise good thinking, is surely someone who is not trying very hard to be a good citizen. In short, ignorance is not a full defence.

Subtlety and difficulty of avoidance:

Some types of biased judgement are particularly difficult to detect and prevent; in some cases introspection is

² Using focus groups is not wrong but adopting tactics that exploit thinking weaknesses is.

no help at all. For example, if you ask people to estimate an uncertain number using judgement alone and ask them to give a range such that they are 90% sure the true value will fall inside that range, then their ranges are usually too narrow. This kind of narrow mindedness is impossible to sense in yourself and happens even for people who know about the bias³.

In contrast, suppose someone adds up some costs for a proposed project, finds the total is too high for the project to be attractive to other people, and so changes some estimates to get a different, lower number. That's not something you do by accident despite trying not to and so is a more serious example of faulty thinking.

Typically, biased judgement is more difficult to notice in yourself than faulty reasoning, which tends to be more conscious.

Deliberateness and subtlety tend to be opposed because subtle faults are more easily done by accident.

The effect on others: The more others lose unfairly as a result of someone's faulty thinking the worse it is.

Persistence: Faulty thinking is worse if it is done persistently. This is perhaps largely because persistence is linked to other factors. Persistent faulty thinking is more likely to be deliberate and more likely to have major implications for others.

Factors that are *not* relevant to deciding how ethically bad some faulty thinking is include these:

Difficulty of proving wrongdoing: Some forms of faulty thinking may seem

difficult to prove. In particular, proving something was done deliberately rather than just because it is a common mistake seems like it would be very hard. However, this is relevant to whether we bother to try to establish the truth, and is not relevant to judging the ethical seriousness of a behaviour once the truth has been established.

As a society we already go to extraordinary lengths to prosecute some types of crime, using advanced technologies and huge databases.

Tradition/precedent: If faulty thinking in a particular situation is normal that does not make it acceptable. A perpetrator might say 'Alright, so I admit I tweaked the truth a bit but we politicians have always done that so it's unfair for you to single me out.' What is unfair is to have let others get away with it.

What others are doing: 'He started it' is not a defence. Sometimes the reason people twist the truth when arguing their case is because they think the other side is doing it too. That's a reason, but not an excuse.

The motives: Except in very extreme situations, like extreme duress and to save many lives, the motive for faulty thinking should not be a factor. If the faulty thinker stands to gain a lot from his/her errors then that's bad. If they stand to gain very little, and yet others lose a lot, then that's worse in some ways since it shows how much more important they think they are than other people.

The type of gain involved is not important either. We tend to be more sensitive to gains of money than to gains of things that are worth just as much money but not actually existing as money (Ariely 2012). However, this is not really rational. If someone misrepresents their performance at work and gets promoted

³ Although impossible to sense in yourself, this bias can still be reduced or eliminated using suitable procedures.

as a result, gaining a pay rise worth £35,000 over the course of their career, then they have profited to that extent by their deception. It's a fraud worth £35,000 perpetrated in a way that many of us are guilty of (though perhaps not consciously), at least in subtle ways.

Nor does it matter if the faulty thinker gains or just avoids a loss.

And it doesn't matter if it is the thinker or someone close to them who benefits, or even if it is a group they belong to, even if it's a minority group.

The weakness of others: It is not a defence to say that other people should have spotted your mistakes or deceptions and so you are not responsible for their losses.

Identifying faulty thinking that should be tackled

Carl Sagan and Michael Shermer have each offered advice on 'Baloney Detection' that is worth a look but I have found it difficult to use their indicators. Too often I find that some perfectly good reasoning falls foul of some of their guidelines, which tend to be a little biased towards the scientific status quo⁴. Usually, in order to get a more reliable indication, we need to:

- go into the detail to understand exactly what tricks/errors have occurred; and
- look for persistent patterns over time.

There's a big difference between the occasional slip and a persistent, self-interested pattern of behaviour.

⁴ This may be because their main targets are the usual scams: homeopathy, crystal healing, astrology, graphology, crop circles, etc.

To illustrate this idea of persistent patterns, here are some I have encountered over the years.

Biased judgement: Judgements usually involve estimating or predicting uncertain quantities. There is always an error and individual errors do not indicate bias. However, over a series of judgements the pattern of errors will gradually reveal any bias, if suitably analysed.

Empty promises: A long pattern of promises of benefits in future with no credible explanation of how those will be provided is an indication that the promises are empty. It is not necessary to explain how promised benefits will be achieved every time that a promise is made, but over a period of time it is expected that some sensible explanations will be provided. Examples of this syndrome include Donald Trump's policies as a presidential candidate and much advertising for cosmetic products, whose explanations have often been pseudoscientific claptrap, straining advertising rules to or beyond the limit.

Moving on without conceding or adjusting: The tactic here is to minimise the impact of being shown to be wrong on a point by (a) not conceding it explicitly and (b) not making any adjustment to your position. Instead, the perpetrator just moves on to a different issue, hoping people will forget what just happened.

Not correcting errors that have been pointed out, for silly reasons: A related pattern is the long term failure to correct errors, even when they are clear cut and have been pointed out. This may be accompanied by giving silly excuses for making no changes.

Maintaining the appearance of controversy: Yet another related pattern occurs when an unscrupulous person wants to create doubt and

controversy about something, such as the safety of immunisation, the birthplace of a president, or the legality of an email server. Carried out determinedly, the pattern involves simply raising questions and objections on one detail after another, wearing people down with overblown objections and facts that need to be checked, picking up on isolated examples and claiming they are a general problem, and shifting between issues without conceding defeat on any one of them.

Taking offence tactically: This familiar ploy is to take offence at something an opponent has said that was not offensive, and paint them as offensive rather than deal with the issues properly. This is used so often with some issues that it is very difficult to have a public debate in the UK on topics such as any form of damage done by religion, intolerance directly caused by religious beliefs, challenges created by mass immigration, incompetent behaviour by some women, and the effects and management of unhelpful behaviour by some people in 'lower' social classes.

Taking offence tactically is also used at work when people want to defend a disappointing outcome. Rather than discuss the implications of the disappointing results they will instead take offence at the results being criticised in any way, pointing to the difficult circumstances.

Barrages of questions about definitions: A tactic I have seen more than once from followers of Neuro Linguistic Programming is to attack detractors with a barrage of questions about what words and phrases mean. Some of these may be reasonable requests for clarification, but others are questioning familiar words that are

already quite clear enough for the purposes of the discussion. It's a ploy.

Unjustified but complete condemnation of the trustworthiness of opponents: One of Donald Trump's consistent themes during his presidential campaign was that his opponent and all connected with her could not be trusted. It was all rigged, covered-up, a conspiracy. If your opponent has something to gain, attack their motives. Failing that, suggest they are psychologically disturbed. Failing that, generalise from the fact that some scientists have cheated to claim that all scientists cheat.

Disrespecting evidence and reason: The strategy of denying an opponent's credibility reaches its logical conclusion with assaults on reason.

What kind of faulty thinking is it?

Identifying persistent patterns of faulty thinking does not always tell us which type of faulty thinking it is. It might be littering, negligence, assault (on reason), corruption, fraud, or perhaps something not discussed in this article.

Apparently similar evangelical young-earth creationists might be sincere litterers or cynical fraudsters. The difficulty arises because the cynical fraudsters do their best to appear to be sincere.

This may make it difficult to decide how serious the matter is, but at least we still know that the thinking is faulty and should stop.

What could society do?

If we, as a society, wanted to reduce faulty thinking because it is unethical when done deliberately or negligently,

what could we do? Here are some suggestions.

Establish rigorous standards for thinking and rigorous processes for evaluating thinking: This might be useful for education, for assessing employees, for assessing conduct in legal cases, and for tracking the behaviour of politicians and others in the public eye (perhaps with websites where you can check their behaviour before voting).

Improve the standards we expect of advertising, journalism, and political communication: These are highly visible areas and sometimes have institutions in place already to investigate wrong doing and require remedies. Journalists could be required, not only to seek and report the truth to a much greater extent than they do now, but also to identify and highlight the debating tricks of companies and politicians, with devastating technical clarity.

In the UK, the position on advertising has improved over the past few years, but there is still a long way to go. Frantz (2000) offers some interesting analysis and suggestions on advertising in the USA, focusing on 'puffery'.

Legislate and prosecute: Some of the faults discussed above are already illegal, so this would involve just clarifying and slightly extending the rules to catch more.

One improvement that might make it possible to do more is to develop improved methods for detailed, forensic examination of what people have said, written, and done for evidence of thinking faults. The faults checked for could be defined, clarified, classified, and graded. In everyday situations it is difficult to analyse, notice, and accumulate the many faults that we encounter, but an expert, working at a rate of two pages a day, could find far more.

Teach the skills and virtue of fair and truth-seeking thinking in schools:

This could be made compulsory. Frantz (2000) again has some suggestions, but teaching critical thinking in schools and universities is a widespread idea that still needs to be acted on much more effectively.

Fund research into ways to make fair and truth-seeking thinking successful in business:

The idea that in business you have to be rough and vicious is probably a myth. Research might be able to establish the situations in which good thinking is more successful and help develop strategies that increase the advantage from good thinking.

If persistent, deliberate or negligent faulty thinking was regarded with the same distaste as sexism or smoking near children then that surely would have some effect on the prevalence of faulty thinking in public life and in all of society.

What can we each do for ourselves?

Through whatever self-development means we find most effective, we can learn to think better and to succeed without faulty thinking. The second point is less obvious, so here are some examples of ways to succeed:

- Perceive faulty thinking in ourselves and others more quickly, easily, and comprehensively.
- Effectively respond to trick arguments by others, preventing them from tricking us and others.
- Without using dishonest tactics, help others understand and so support the ideas and plans that they should support.
- Reach better conclusions, more easily, in our own thinking.

- Deal with situations where our views are minority views.
- Adapt to new realizations instead of resisting them to save face.
- Be a role model people can respect.

The more we know about how to succeed better by good thinking the less tempting it is to rely on deception and self-delusion.

Conclusion

Working through examples of faulty thinking and comparing them to our understanding of the words 'littering', 'negligence', 'assault' (on reason), 'corruption', and 'fraud' shows that faulty thinking can be ethically serious, even when it is not of a kind we usually think of as criminal or even unethical.

There is scope for us to be more sensitive to, and less accepting of, faulty thinking. We should expect higher standards from ourselves and from others.

This is not effortless. It requires courage and skill. However, this can be done in increments, and each incremental improvement requires just a little bit of courage and little bit of skill.

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