Chapter 10
Fallacies and Unfair Discussion Methods

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Abstract Many discussions and meetings are led perfectly from a formal and procedural perspective, but the quality of the in-depth discussion is nevertheless poor. The cause of poor thinking should be sought in the weakness of human nature, rather than in the limitations of our intelligence. Among the weaknesses of human nature are ambitions, emotions, prejudices and laziness of thinking. The goal of a discussion is not to be right or to overplay or mislead the other, but to discover the truth or to come to an agreement by common and orderly thinking. In Section 10.2 we discuss a dozen fallacies and in Section 10.3 a dozen unfair discussion methods. This chapter follows - broadly speaking - the nice arrangement of fallacies and unfair discussion methods of a Dutch booklet from the 1950s, Zindelijk denken [Thinking clearly], by A.F.G. van Hoesel [2]. Many examples in this chapter also come from this booklet.

10.1 Introduction

Ideally, an argument consists of carefully specified premisses or assumptions and a conclusion which logically follows from the premisses. Logical validity of an argument means that *if* the premisses are true, *then* the conclusion must also be true. In Chapter 1 we have already seen that logical validity of an argument does not mean that the premisses are true, nor that the conclusion is true. We may have a logically valid argument with a false conclusion when at least one of the premisses is false. And a logically invalid argument may have a conclusion that is true, when its truth is not based on the given premisses but on other grounds. One should also realize that from a set of inconsistent premisses one may conclude anything one wants: ex falso sequitur quod libet; a principle popular among many politicians.

In Subsection 2.3.2 we already mentioned that in real life premisses and even the conclusion may be tacit, in which case one speaks of *enthymemes*. Premisses may be left implicit for practical reasons or because the speaker is not aware of them himself, but might also be omitted in order to mislead the audience.

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One may distinguish formal and informal fallacies. A *formal fallacy* is an invalid argument whose incorrectness can be established via a formal representation in an appropriate logical system. A simple example is: A implies B ($A \rightarrow B$) and B; hence A. For instance: if the weather is nice, then John will come. John comes; hence the weather is nice. That this argument is incorrect may become clear from the following example which has exactly the same structure: if Bill Gates owns all the gold in Fort Knox, then he is rich. Bill Gates is rich; hence Bill Gates owns all the gold in Fort Knox. We discussed a number of such formal fallacies in Chapter 1.

In this Chapter we want to focus on *informal fallacies* in which the putative conclusion is not supported by the content of the premisses, but is based on the ambitions, emotions, prejudices and/or laziness of thinking of the people involved. In real life, these weaknesses of human nature play a major role in argumentation, debating and discussions. Quoting Jean de Boisson: 'It is difficult to take someone who has a different opinion for a wise person'. A speaker may be too proud to admit that he is wrong, he may be irritated by his opponent and consequently say more than he can justify, he may have prejudices which he does not want to give up and/or he may be too lazy to study an issue carefully and for that reason oversimplify it.

So, in real life discussions and debating it is important that one is aware of all kinds of tricks which are used, consciously or unconsciously, by one's opponent to suggest that you are wrong, while in fact your opponent is wrong. In this Chapter we give a classification of fallacies and unfair discussion methods, which is based on the Dutch booklet by A.F.G. van Hoesel [2]. This classification is not meant to be exhaustive, and the different categories are not necessarily mutually exclusive.

Quoting Arthur Schopenhauer in his booklet 'The Art of Always Being Right' [4]:

> A man may be objectively in the right, and nevertheless in the eyes of bystanders, and sometimes in his own, he may come off worst. For example, I may advance a proof of some assertion, and my adversary may refute the proof, and thus appear to have refuted the assertion. There may, nevertheless, be other proofs. In this case ... he comes off best, although, as a matter of fact, he is in the wrong. [p. 23]
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> If the reader asks how this is, I reply that it is simply the natural baseness of human nature. If human nature were ... thoroughly honourable, we should in every debate have no other aim than the discovery of truth. We should not in the least care whether the truth proves to be in favour of the opinion which we had begun by expressing, or of the opinion of our adversary. That we should regard as a matter of no importance ... . But, as things are, it is the main concern. Our innate vanity will not allow that our first position was wrong and our adversary's right. [p. 24]
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> The way out of this difficulty would be simply to take the trouble always to form a correct judgement. For this a man would have to think before he spoke. But, with most men, innate vanity is accompanied by loquacity and innate dishonesty. They speak before they think; and even though they may afterwards perceive that they are wrong they want it to seem the contrary. The interest in truth, which may be presumed to have been their only motive when they stated the proposition alleged to be true, now gives way to the interests of vanity. So, for the sake of vanity, what is true must seem false, and what is false must seem true. [p.25]

The topic and purpose of this Chapter is best formulated by Schopenhauer [4], p. 29: 'Even when a man has truth on his side, he needs dialectic in order to defend and maintain it; he must know what the dishonest tricks are, in order to meet them, so as to beat the enemy with his own weapons.'

10.2 Fallacies

A *fallacy* or *sophism* is a reason or reasoning which sounds plausible, but actually is not adequate. The oldest known treatises are:
1. the dialogue *Euthydemos* of Plato, written about 384 BC, in which he satirizes what he presents as the logical fallacies of the Sophists, Euthydemos among them;
2. *Sophistikoi elenchoi* (sophistical refutations) of his pupil Aristotle, in which the emphasis is on semantic and rhetorical matters having to do with argumentation.

10.2.1 Clichés and Killers

A **cliché** is a frequently used expression that has lost its freshness and descriptive power. It refers to a saying or expression that, upon its inception, was striking and thought-provoking, but has been so overused that it has become boring and unoriginal. The French poet Gérard de Nerval said: 'The first man who compared a woman to a rose was a poet, the second, an imbecile'. Synonyms for the word cliché are: platitude, commonplace, saying.

Example 10.1 (Clichés). a) Opposites attract;
b) Woke up on the wrong side of the bed.

Clichés frequently express experiences of many generations in a compact way and hence contain a core of truth. Such expressions are easy to handle in a debate and meet the laziness of thinking of both speaker and listener, because they are nice to hear. Statements like 'time is money' and 'if the need is the highest, the rescue is near' - although not true - are generally considered to be true and do not attract scrutiny from the listener.

Many clichés have meanings that are obvious; others have meanings that are only clear if you know the context. For instance, the obvious meaning of 'any port in a storm' is that in a bad situation anything will do. However, this cliché can also be used when talking about someone who has many lovers.

Example 10.2 (Clichés). Some more examples of clichés are:

I thank you from the bottom of my heart	It's only a drop in the bucket
Do not play with fire	Beauty is skin deep
All that glitters isn't gold	He has his tail between his legs
Had nerves of steel	The time of my life
The calm before the storm	Laughter is the best medicine
Time heals all wounds	Frightened to death
Read between the lines	Only time will tell
All is fair in love and war	Haste makes waste

A **killer** or silencer is a meaningless argument to divert a conversation from the subject, hence cutting off a further exchange of views. In some contexts these arguments may be appropriate and true, in others they are only meant to finish the discussion without further arguments.

Example 10.3 (Killers). a) The truth is in the middle;
b) The exception proves the rule.

For instance, if in a discussion someone says that all football players have a high salary and his opponent argues that he knows some amateur players who get nothing, the answer that this exception proves the rule is simply misleading. The exception just shows that the original statement was too general and that it would have been more appropriate to state that many or most football players earn a high salary. In which case the opponent would certainly have agreed.

When two persons have opposite views concerning a certain item, frequently a third person tries to make a wise impression by stating: 'gentlemen, would not the truth be in the middle'. However, when one person says '2 + 2 = 4' and the other says '2 + 2 = 6', then the truth is certainly not in the middle. This killer argument of the middle way is not to be confused with a compromise where one tries to unite what is acceptable to both parties, in order to be able to proceed.

If in a discussion about improvements in the cafeteria of a company one of the engineers states 'let us be realistic; the first mission of the company is production', this argument looks like a down-to-earth argument, but it ignores the fact that a better canteen may result in a better production. And suggestions of employees to improve the production process are frequently dismissed by statements as 'Tell me something I don't know' or 'since when are you the expert'.

If in a political discussion someone claims that there are good arguments for immigration restrictions, a liberal who dismisses the speaker on the basis of her being a conservative, ends the discussion without asking for clarification. Similarly, if a person says he has strong arguments in favor of nuclear energy, someone might immediately use a killer argument like 'that is just your opinion' to finish the discussion and most likely no one will ask for the announced arguments.

One may also kill a discussion by using body language, a facial expression or by raising one's eyebrows.

Example 10.4 (Killers). Some more examples of killers:

It is only a matter of taste	Do not worry; it is as it is
Impossible!	That is nothing for our clients
It is too difficult to handle	Too expensive!
That is illogical	More research is needed
The management will not like the idea	There is no budget for it
Not my responsibility	That is too great a change
Let's keep it under consideration	We do not have time for that
The market is not yet ripe	We are too small for that
I have never heard of this	We will put someone on it later
Practice is always different	There he goes again
I already know what you are going to say	You are a right wing zealot

10.2.2 Improper or hasty Generalizations

An improper generalization is a general statement based on frequently emotional experiences with only a small number of particular instances.

Example 10.5 (Improper generalizations). a) Civil servants are lazy; b) Juvenile delinquents are psychopaths; c) Women are vain; d) Blondes are stupid.

When someone has met two or three civil servants whom he viewed as being lazy, he will be inclined to generalize his limited experience to: civil servants are lazy. This latter expression will be understood by most people as: *all* civil servants are lazy. However, if the person in question would generalize his experience with two lazy officers to 'all civil servants are lazy', it would become easy to reject his statement. So, the person in question will say 'civil servants are lazy', while the only thing he is entitled to say would be something like 'some civil servants are lazy'. However, this statement is so weak that it looks completely uninteresting. That is why one will usually say 'civil servants are lazy'.

Similar stories may be told about expressions like 'women are vain', 'children are difficult to handle', 'specialists are expensive', 'men are egoistic', 'people from Morocco cannot be trusted', etc. In general, there is no proof at all to suppose that among civil servants there is a higher percentage of lazy ones than among masons, carpenters or gardeners. Frequently, improper generalizations, like 'politicians are unreliable' and 'blondes are stupid', are the consequence of emotional experiences with some particular instances, which for convenience are generalized, even when counterexamples are known.

Consider the following four statements (van Hoesel [2]):

1. All juvenile delinquents are psychopaths.
2. Juvenile delinquents are psychopaths.
3. The juvenile delinquents I have had in my practice are psychopaths.
4. The juvenile delinquents I have had in my practice are psychopaths; but I have to add that I only had two.

Notice that the third sentence looks as a scientific generalization and suggests a sufficient number of observations. The craftiness of the third sentence lies in the fact that, on the one hand, a fair restriction is made by saying 'that I have had in my practice' (a restriction that undoubtedly inspires confidence), while on the other hand it fails to indicate on how many practical cases the judgment is based.

Notice that in some cases it is completely justified to draw a general conclusion from a single observation. For instance, if a scientist in one experiment determines the melting point of some substance. Experience has learned us that the melting point of a substance is invariable (all other things, such as air pressure, being equal). So, in this case one single observation justifies the generalization. On the other hand, suppose that for a long time one has thought that swans are white, because one has never seen a swan with a different colour. But this could be simply because the person has never been to a different part of the continent where there are black swans. In this case the thousands and thousands of observations did not justify the absolute generalization 'all swans are white'.

Example 10.6 (Improper generalizations). Some more examples:
My grandfather smoked all day and he made it to 95, so smoking is not bad!
My friends all study law and I never saw them reading a book. So, it seems to me that law students do not read books.
Most employers are too picky; I have applied for three different jobs and have not been hired.
The last five years were very warm, so the climate has changed.
Last spring we stayed in a hotel in Germany and everything was extremely clean; so, you see, Germans are very neat and hygienic.
Today 50% of the women who took the driving test failed. Women must be incompetent drivers. (But the speaker does not mention that only two women took the test today.)

One makes a *slippery slope argument* when one takes several related ideas and inappropriately makes a generalization about them all.

Example 10.7 (Slippery slope arguments).
If we stop insisting that students wear button-up shirts to class, next thing you know, they will be coming to class in pajamas.
If the border of Europe is not at the border of Turkey, then one may equally well form a union with China.
If we allow him to smoke a cigarette now, he will become addicted to cocaine.
If the health insurance company were to start paying for viagra, by tomorrow people will expect them to start reimbursing BMWs.

Another type of improper generalization is the *questionable analogy* which takes an analogy and inappropriately generalizes the relationship between the two items.
See also Subsection 10.3.4.3.

Example 10.8 (Questionable analogy).
Forcing people to pay taxes is like cornering them in a dark alley and demanding their money.
You can not fold that book as the back of the book cannot stand it. I do not fold you in half either.
Education is like cake. A small amount tastes sweet, but eat too much and it will spoil your teeth. Likewise, too much education is not good.

10.2.3 Thinking simplistically

When one is confronted with large complex problems or theories which require a lot of knowledge, effort and thinking in order to understand them, our laziness of thinking frequently leads us to leave out the nuances. One may simplify Einstein's theory of relativity to 'everything is relative', Freud's theory about subconsciousness to 'everything is sexuality' and one may dismiss a person who is concerned about overpopulation by calling him a misanthrope. Frequently one does not (want

to) take the time nor the effort to study the problem in depth, while on the other hand one wants to participate in the discussion, resulting in an oversimplification of the problem or theory in question. Questions like 'can you explain to me in five minutes what philosophy is all about' are typical examples of our laziness of thinking. When the discussion takes place among people with limited competence, the one who simplifies will frequently have the sympathy of the others, because the only specialist in the group is hard to understand and seems to make things more complicated than necessary. With slogans as 'simplicity is the hallmark of truth' the one who simplifies may defend his position by suggesting that his opponent, the specialist, makes things too complicated. If a child asks his mother what Jehovah's witnesses stand for, the mother may give the following oversimplified answer: they are people who do not accept blood transfusions when they need it. Such an answer ignores completely the essence that Jehovah's witnesses take the Bible as their source of inspiration.

Example 10.9 (Thinking simplistically). Arthur Schopenhauer [4] gives a nice example in his Chapter 28: Persuade the audience, not the opponent.

> This is chiefly practicable in a dispute between scholars in the presence of the unlearned. If you have no refutation *whatsoever*, you can make one *aimed at the audience*; that is to say, you can start some invalid objection, which only an expert sees to be invalid. Though your opponent is an expert, those who form your audience are not, and accordingly, in their eyes, he is defeated, particularly if the objections which you make places him in any ridiculous light. People are ready to laugh, and you have the laughers on your side. To show that your objection is an idle one, would require a long explanation on the part of your opponent, and a reference to the principles of the branch of knowledge in question, or to the elements of the matter which you are discussing; and people are not disposed to listen to it.
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> For example, your opponent states that in the original formation of a mountain-range the granite and other elements in its composition were, by reason of their high temperature, in a fluid or molten state; that the temperature must have amounted to some 480 degrees Fahrenheit; and that when the mass took shape it was covered by the sea. You reply that at that temperature – indeed, long before it had been reached, namely, at 212 degrees Fahrenheit – the sea would have been boiled away; and spread through the air in the form of steam. At this the audience laughs. To refute the objection, your opponent would have to show that the boiling-point depends not only on the degree of warmth, but also on the atmospheric pressure, and that as soon as about half the seawater had gone off in the shape of steam, this pressure would be so greatly increased that the rest of it would fail to boil even at a temperature of 480 degrees. He is debarred from giving this explanation, as it would require a treatise to demonstrate the matter to those who had no acquaintance with physics.

In daily life one may not be able to avoid simplistic thinking completely, because one cannot be an expert in all fields. A good example is when a doctor has to explain to a patient what is wrong with him or her. He cannot expect that the patient has the knowledge he has himself, so he must resort to simplifications that are hopefully understood by the patient. When one has to choose between two or three cars or insurances, one is not able to take all aspects and details into account. In such cases one has to act at a certain moment and make the choice which seems overall best at that moment.

If one wants to become a member of a political party and one wavers between two of them because both have more attractive and less attractive elements, then

opting for one of them will make one understand and respect people who opted for the other party. And based on new facts and experiences one may change one's mind later on.

10.2.4 Appeal to ignorance

A particular form of simplistic thinking is the appeal to ignorance. The speaker shifts the burden of proof to his opponent instead of offering an argument for his own claim. For example, if the speaker claims that someone is guilty by saying to him: prove to me that you are innocent.

Example 10.10 (Appeal to ignorance). No one has ever been able to prove that ghosts do exist, so they must not be real.

However, the same argument strategy may be used to support the opposite claim: No one has ever been able to prove that ghosts do not exist, so they must be real. Ignorance is not proof of anything except that one does not know something.

A more relevant example is from a discussion in a city council:

Example 10.11 (Appeal to ignorance). No one has been able to prove that radiation from transmission masts is safe; therefore, we should not allow them in our city.

However, similar reasoning may be used to allow them: No one has been able to prove that radiation from transmission masts is dangerous; therefore, they are safe.

Example 10.12 (Appeal to ignorance). Newton's theory of classical mechanics is not one hundred percent accurate. Therefore, Einstein's theory of relativity must be true.

Perhaps the theory of quantum mechanics is more accurate and Einstein's theory is flawed. Perhaps all theories in question are wrong. If one disproves someone's claim that $2 + 2 = 5$, it does not mean that my claim that $2 + 2 = 7$ is true.

The term *argumentum ad ignorantiam* was introduced by John Locke in his Essay Concerning Human Understanding (1690). This fallacy essentially boils down to the following two variants:
- Inferring that something is true from the fact that it has not been proven to be false;
- Inferring that something is false from the fact that it has not been proven to be true.

In the context of science, the mistake in the first variant is that a model can be false even though there are to date no known experimental falsifications – that is, even though the model is thus far in agreement with experimental data. The mistake in the second variant is that a model can be true even though it has not yet been tested.

As to the first variant, here are some historical examples that date from the time that Newtonian mechanics (now proven to be false on a micro and on a macro level) was still in agreement with all experiments:
- 'We are probably nearing the limit of all we can know about astronomy.' (Simon

Newcomb, astronomer, 1888)
- 'The more important fundamental laws and facts of physical science have all been discovered .... Our future discoveries must be looked for in the sixth place of decimals.' (Physicist Albert. A. Michelson, 1894)
- 'There is nothing new to be discovered in physics now. All that remains is more and more precise measurement.' (Lord Kelvin, 1900)

Also, currently, the adjective standard in the 'standard model of particle and interactions' (the name for a body of theories in particle physics) reflects the confidence of the physics community that this is basically the correct picture. But, truth be told: this has not been refuted yet.

As to the second variant, we have this interesting quote: 'Third-rate scientists cry that everything has to be proven and mistake not being proven to be true as proven to be false or at least not worthy of further consideration. (Hans Ten Dam, Journal of Regression Therapy, VIII(1), 1994)

And so, this fallacy lies at the very basis of the fact that anyone who comes up with a new theory will have a hard time getting it published in a recognized journal. It is virtually a certainty that he will stumble on a referee report recommending rejection along these lines:
- the author comes up with a new theory;
- this new theory is not proven to be correct in every aspect;
- therefore, the theory should be rejected, i.e., is not worthy of further consideration.

Practically every professional scientist who works on new theories will have had a rejection along these lines at least once in his career. The mistake is thus to think that a theory that has not been proven to be true in every aspect is not worthy of further consideration. Of course, there may be good reasons to reject a new theory, but the point is that it is a mistake to reject it as unworthy of further consideration because it has not been proven to be true. The key is to remain impartial. That is actually another one of the so-called principles of good scientific practice that are widely agreed upon: the principle of impartiality. This implies, among other things, that a different intellectual stance must be respected.

10.2.5 Speculative Thinking

Opinions should be based on facts, not on speculations. Speculating may be interesting at the stock market, sometimes yielding profit and sometimes yielding loss. Speculations may be useful because they suggest what might be the case or what might happen. But only facts can tell us what actually is the case or what actually happens. Nevertheless, speculative arguments are frequently used in discussions among people. Here are some examples: every right-minded person knows that it must be like that; it cannot be otherwise; it has always been the case; it cannot be that that's right. Frequently one argues that things are the way they are because it always was the case or because it should be this way. But to quote Johan de Iongh:

'One of the most important tasks of a philosopher is to make clear that things do not have to be the way they are, that they might be different and in some cases even should be different.'

Example 10.13 (Speculative thinking). Here are three examples, all from [2].

A good and simple example is the following discussion. Based on the results of some tests, a doctor prescribes a patient a diet without salt. When his wife is informed about this, she reacts as follows: no salt at all? That can never be good! Asking this woman on which facts or arguments her statement is based, she will probably look at you in amazement and say: it cannot be that that is right.

In a discussion between a biologist who is enthusiastic about Darwin's theory of evolution and a skeptic, the latter might bring in the following arguments against Darwin's theory, all of them speculative and not based on facts: 1. It may never have been God's intention to let the most beautiful part of His creation originate from a being equipped with only instincts; 2. It must be excluded that mankind descends from such a stinking monkey; 3. For me it is certain that the higher can never have evolved from the lower.

Another example is the discussion between two non-American managers with opposite views about some new method introduced in the United States. The one opposed to the method might use the following arguments, again all of them speculative and not based on any facts: 1. It can never be good to always emulate America; 2. We have everything we need for our company; you may be able to put something else in its place, but certainly not something better; 3. A system that has proven its practicality for so long has to be much better than such a newfangled American theory. Maybe, it will turn out that the new policies should be rejected, but these arguments are purely emotional and not based on facts.

Strikingly, people using speculative arguments frequently do so with great self-consciousness and without showing any doubts about their own points of view. They tend to react very emotionally to objections with expressions like: crazy to run loose to assume that …; for everyone with a little sense, it is obvious that …; every right-minded person knows that this has to be the case. See Section 10.3.4.

One might think that speculative argumentation does not occur in a purely scientific environment. Unfortunately, this is too good to be true. An example is the election of a president, mayor or chairman. We have been holding elections already many years in the familiar way, but from social choice theory it is evident that practically all existing election methods are seriously defective. Nevertheless, a scientifically well defended proposal for another completely new election method, namely Balinski and Laraki's Majority Judgment, is generally met with great skepticism, also among specialists in social choice theory. Similarly, Einstein's Relativity Theory was originally met with great scepticism. See Section 10.2.6 for more examples in the history of science.

And although organizations funding scientific research claim that they select the best projects, their arguments to fund or not fund particular projects are in fact frequently of a speculative nature. One also sees the phenomenon that scientists have prejudices or presuppositions they are not aware of and consequently proceed down

a dead alley. Giving up the original prejudices or presuppositions might harm their reputation or might mean the end of their funding.

10.2.6 Incredulity

This fallacy essentially boils down to this: what I don't believe cannot be true. A weaker form is this: what I don't believe is not worthy of further consideration.

In the history of science there have been numerous occasions where scientists have been collectively mistaken in their rejection of a new idea: often the mistake then stems from this fallacy. It is thus a mistake to think that something cannot be true (or valuable) if you don't believe it: the opposite is true – that is, something can be true even if you don't believe it. Below are some historical examples that are based on this fallacy:

'... so many centuries after the Creation it is unlikely that anyone could find hitherto unknown lands of any value.' (committee advising Ferdinand and Isabella regarding Columbus' proposal, 1486)

'Drill for oil? You mean drill into the ground to try and find oil? You're crazy.' (drillers who Edwin L. Drake tried to enlist to his project to drill for oil in 1859)

'Louis Pasteur's theory of germs is a ridiculous fiction.' (Pierre Pachet, Professor of Physiology at Toulouse, 1872)

'Fooling around with alternating current is just a waste of time. Nobody will use it, ever.' (Thomas Edison, 1889)

'Heavier-than-air flying machines are impossible.' (Lord Kelvin, president Royal Society, 1895)

'Airplanes are interesting toys but of no military value.' (Marechal Ferdinand Foch, Professor of Strategy, Ecole Superieure de Guerre, 1911)

'All a trick.' 'A Mere Mountebank.' 'Absolute swindler.' (members of Britain's Royal Society, 1926, after a demonstration of television)

'Space travel is bunk.' (Sir Harold Spencer Jones, Astronomer Royal of Britain, 1957, two weeks before the launch of Sputnik)

Besides that, this fallacy reflecting a standard response of the human mind has been used in politics by a variety of governments, who very well know that they will easily get away with colossal lies because the people simply cannot believe that their own government would have the impunity to resort to such large-scale falsehoods. Concluding, the truth of the matter is that only very few people are able to consider the situation that their own belief about something is wrong. The famous Russian novelist Leo Tolstoy expressed this as follows:

> I know that the majority, not only of those that are considered intelligent people, but even of the really very intelligent people that are able to understand the most difficult scientific, mathematical, philosophical, problems, only very rarely can comprehend even the most simple and evident truth, if it is such that as a result thereof they would have to admit that their own, sometimes difficultly acquired opinion about things, which they are proud of, which they have taught others, and which they have based their entire lives on, might be false. [Leo Tolstoy, What is Art?, Ch. XIV (1897) (translation by M. Cabbolet)]

The *fallacy of incredulity* applies when a scientist spontaneously and fiercely rejects ideas which are inconsistent with what he has believed himself all his life. A kind of reverse fallacy of incredulity is when a scientist uses any piece of evidence as proof for his favored claim. A recent example is the claim that the Higgs boson exists. In the literature it is even stated that scientists have observed the Higgs Boson. But what one has actually observed are the decay products of the Higgs boson during a very small fraction of a second.

A particular form of the fallacy of incredulity frequently occurs when someone questions a widely accepted model. It has virtually become the standard reaction of 'experts' to any dissenting paper that questions a widely accepted model, to (often publicly) denounce its author as incompetent. According to Brian Martin, who has devoted his career to the study of the suppression of dissent in modern times, the reasoning is as follows:
- Observation: an author criticizes a widely used model.
- (Tacit) assumption: the author in question is not aware of the reasons why the model has become widely used.
- Conclusion: the author is incompetent.
This is a clear-cut case of jumping to conclusions. The mistake is thus to think that when someone criticizes an accepted model, he or she is therefore unaware of the reasons why that model has become accepted. However, the opposite is frequently the case: an author may criticize a widely used model, even though he or she is competent in the relevant field. Of course, an author who criticizes an accepted model may indeed be incompetent, but the point is that this incompetence cannot be deduced immediately from the sheer fact alone that he or she criticizes the model. Unfortunately, this is what frequently happens in scientific discourse!

Example 10.14 (Incredulity). 'Professor Goddard does not know the relation between action and reaction and the need to have something better than a vacuum against which to react. He seems to lack the basic knowledge ladled out daily in high schools.' (1921, New York Times editorial about Robert Goddard's revolutionary rocket work)

The observation is that Goddard comes up with an idea for a rocket. At the time this was considered impossible within the framework of Newtonian mechanics: the tacit assumption is thus that anyone who nevertheless suggests that rockets are possible does not know Newtonian mechanics.

10.2.7 The use of Terms with a vague Meaning

An essential ingredient for a good discussion is that all discussants involved know what they are talking about. Nevertheless it rather frequently happens that people talk past each other. The cause is then that the topic of the discussion is extremely vague and therefore has a different meaning for everyone involved. Examples of

words with a vague meaning are: democracy, slavery, intelligence, socialism, capitalism, power, green, sustainable. In a discussion with an alderman I heard him say: 'that is democracy: most votes count'. But from social choice theory we know that there are many ways to aggregate the preferences of the people into a social or common preference and that 'most votes count' is one of the worst ways to do so.

'I love you' is another example of an expression with a vague meaning. It may mean: I will take care of you, I find you attractive, I want to make love to you, I will be faithful to you, I want to marry you, and all kinds of other things in between.

Example 10.15 (Vague terms).
A man after visiting a modern production facility might argue that the employees in the factory have become slaves, while his opponent might counter argue that the employees are allowed to complain about their circumstances, that they can quit their job, that they have a nice canteen, vacation days etc. The first person, however, may talk about slavery in the sense that the machine rules over the human being, controls his pace and his actions and deprives him of his initiative, while for his opponent the word slavery means quite something else.

Someone argues that John will almost surely vote for the socialistic party, because John is a very social person. However, socialism is a political doctrine, which has nothing to do with the property of John's being a social person.

How is it possible that one so frequently does not realize the vagueness of the terms used and does not take the trouble to make the terms in question more precise? The answer is simple: laziness in general and laziness of thinking in particular. We hear many people talk about democracy, socialism, etc. and they all make the impression that they know what they are talking about, which most likely actually is not the case. Consequently, different people give different meanings to the same words, in this way laying the foundations for many confusing discussions.

Already in the first half of the 20th century the Dutch significists, among them Gerrit Mannoury and Frederik van Eeden, warned for an imprecise use of language resulting in a Babylonian confusion of tongues. See Section 7.3.

> There is an obstacle in the way of the further development and impact of philosophical thought. ... I know of no image that may give a clearer idea of the obstacle I have in mind than the one of the Tower of Babylon, a symbol of the confusion of languages. [Mannoury, 1917; translated from Dutch.]

> The language, which is used by all people as a means of understanding, is full of unclean elements that poison society, such as contaminated water poisons the population of a whole city. For that reason it is important to immediately show that the water supply and the sources from which the city receives its drinking water is contaminated by germs, and it is most urgent to first purify these sources. [F. van Eeden in: Brouwer, L. E. J., F. Van Eeden, J. Van Ginneken en G. Mannoury, Signifische dialogen. 1939; translated from Dutch.]

If in a discussion about psychopaths one realizes that one does not know the content of this term, one might start by looking up the meaning of this word in a dictionary or encyclopedia. But a description of the word psychopath found in the encyclopedia will not suffice and still remains vague. In order to grasp the relevant concept, we need to know a number of examples of psychopaths. It is important that we cannot

only verbalize what a psychopath is, but that we also know the living reality that lies behind it. The latter can be achieved by giving clear examples, such as querulants, kleptomaniacs, criminals, intrigants, fanatics and bigots, giving concrete examples of each of them. In this way we prevent our mind from being filled up with vague or empty notions which say nothing about the world around us.

New words and expressions enter the discussion arena now and then. A modern example is the notion of sustainability. Everyone seems to understand what this word means, i.e., pretends to understand this notion. But in all honesty, this notion is still unclear to the present author.

10.2.8 The Danger of Words with more than one Meaning

Some words do have more than one meaning. A good example is the word nature. It may mean: character; for instance when one speaks about the stubborn nature of John. It may mean: creation; for instance when one speaks of human intervention in nature. It may mean: the status in which primitive people live; for instance when one talks about primitive peoples. By itself it is not a real problem that one and the same word may have different meanings depending on the context. But it becomes problematic when in the same conversation the word is used with quite different meanings, causing a Babylonian confusion of tongues. This may be illustrated by the following conversation between a teacher and the father of one her pupils.

Example 10.16 (Words with more than one meaning). (van Hoesel [2])
Teacher You should talk with your son; a boy with such a stubborn nature must be dealt with firmly.
Father I am not so sure. I doubt whether we are allowed to intervene in nature. Nature is the creation of God and hence is not only beautiful but also perfect.
Teacher Of course, but you do not want to claim that the stubbornness of John is completely natural and should be accepted.
Father What should I say? Nature is nature. Look at the primitive peoples. We find cannibalism there. But because nature is the creation of God, it is perfect. For the same reason there is little to argue against the stubbornness of John.

Synonyms are two words for the same conception; for instance, ‘honorable’ and ’honest’. *Homonyms* are two conceptions which are covered by the same word. For instance, ‘deep’ and ‘high’ used at one moment for bodies, at another moment for tones. Schopenhauer [4] gives the following examples.

Example 10.17 (Words with more than one meaning).
1. Every light can be extinguished. The intellect is a light. Therefore, it can be extinguished.
2. A: You are not yet initiated into the mysteries of the Kantian philosophy.
B: Oh, if it is mysteries you are talking of, I’ll have nothing to do with them.

Another example of an expression with more than one meaning is: do not shoot, please. It may be used by someone who does not want photographers to take a

picture of him. But in the newspaper of the next day it may be reported that there was an attack on the person in question.

Example 10.18 (Words with more than one meaning).
According to Plato the end of a thing is its perfection. But death is the end of life. Hence, death is the perfection of life.

In Plato's usage the word end means: goal. But in 'death is the end of life' the word end means quite something else: termination.

Example 10.19 (Words with more than one meaning).
Giving money to charity is the right thing to do. So, charities have a right to our money.

The first time the word right is used in the sense of correct or good, but the second time it is used in the sense of a claim. Two completely different things.

The words 'true' and 'truth' should be avoided as much as possible. That a statement is true may mean that I have a (mathematical) proof of it; for instance, when I say that '5 + 7 = 12' is true. That a statement is true may also mean that it is in accordance with (empirical) facts; for instance, when I say that it is true that the earth revolves around the sun. But in a social context the word true may also mean that the speaker agrees with what is said; for instance, when I say that orchids are beautiful and you react with 'that is true'. Mathematicians avoid the word true altogether and simply say that 5 + 7 = 12.

The word automation may also have different meanings: self-regulating, mechanization, computerization. A psychologist will most likely use this word in another meaning than a technical engineer. Similarly, the word capital may have quite different meanings: 1. the most important city or town of a country or region; 2. wealth in the form of money or other assets owned by a person or organization; 3. a letter of the size and form used to begin sentences and names; 4. the distinct, typically broader section at the head of a pillar or column.

Example 10.20 (Words with more than one meaning).
The constitution says that all men are equal. But this is clearly not true, because there are rich and poor people, wise and stupid people.

The constitution stipulates that all citizens are equal for the law, i.e., that everyone will be treated in the same way and that no one will be privileged. This has nothing to do with economic equality or equality of intelligence.

Similarly, the word 'complete' has entirely different meanings in theories about mathematics and physics, which makes the following argument misleading.

Example 10.21 (Words with more than one meaning).
Gödel has proved that (formal) mathematics (including elementary number theory) is not complete. Einstein's relativity theory is expressed in mathematics. Therefore, Einstein's relativity theory cannot be complete.

10.2.9 Aprioristic Reasoning

Someone claims that all tables have four legs. You realize you have seen a table with only three legs and you present this counterexample to your opponent. To which he responds: Sorry, such a thing I do not call a table. What is happening here is that the property of having four legs is made part of the definition of the notion of table. Consequently, the proposition 'all tables have four legs' is what Kant would call an analytic statement: the predicate 'having four legs' is contained in the subject concept (tables) of the sentence. In fact, in this way the content of the sentence 'all tables have four legs' is completely empty and the speaker is always right, an undoubtedly desirable situation. A. Schopenhauer discusses in [4] that there are many other tricks for always being right. The situation is similar to the one in which a magician pulls a rabbit out of his hat: everyone knows he has put the rabbit in the hat before.

Example 10.22 (Aprioristic reasoning). Some more examples:
The director of a company argues that all his managers are high level and his co-director notices surprised that at least two of them are of questionable level. Then the director might react with something like: I do not call these guys managers; they should never have been appointed as such. Again, the director makes the property of being high level part of his definition of manager.

A priest argues that Christians are living a more decent life than non-Christians. His opponent mentions some persons which go to church every Sunday, but are drunk the same evening, beat their wife and neglect their children. To which the priest reacts with: sorry, I do not call such people (real) Christians.

Little John claims that all cars have four wheels. His little sister objects that she has seen a car with only three wheels. But John replies with: That's not a car.

All Scottish men love whisky. John is a Scott, but he does not like whisky. So, John is no real Scott!

10.2.10 Circular Reasoning

A circular argument is like a revolving door that one cannot get out of. Its general structure is: A because of B and B because of A. Consider for instance the following conversation (van Hoesel [2]):

Example 10.23 (Circular reasoning).
John I believe that nowadays all young people are lazy.
Codd What might be the reason for this?
John I think they never learned to work.
Codd How could this happen?
John It seems to me because they are simply lazy.

The circular argument becomes less perspicuous when it is of type: A because of B, B because of C, C because of D, D because of E and E because of A.

In rhetoric too people are often guilty of circular reasoning. For instance, someone argues in the heat of his argument: Why does it have to be? Because it's possible! And why is it possible? Because it has to be!

The conversation below also illustrates circular reasoning (van Hoesel [2]):
Teacher Children, do you know that a human being has s soul?
Children Yes, we know.
Teacher But can you also prove this?
Children No, we cannot.
Teacher I will explain. You have all seen an obituary card. If you looked carefully, then you have seen that it mentioned 'pray for the soul of the dead person'. Well, you understand they would not have written this if the human being would not have a soul. Do you understand?
Children Yes!

In circular reasoning, also called *begging the question*, the same proposition is formulated in different words, obscuring the fact that the same proposition is used both as a premiss and a conclusion. In the following examples, the author is repeating the same assertion in different words and then attempting to 'prove' the first assertion with the second one.

Example 10.24 (Circular reasoning).
God exists because it is mentioned in the Bible. What is mentioned in the Bible is true, because it is God's word.
Of course, freedom of speech is important. Everyone must be able to say what he wants.
I am no kleptomaniac, for I do not steal.
I am the director since I have the final word here.

10.2.11 Applying double Standards

It is amazing to see how people use arguments in one context, but refuse to use the same argument in another context. Usually, such an argument is used when it is beneficial to oneself, but not when it is beneficial to others.

Politicians in Western Europe are very strict in condemning what they call expansion of Russia, pointing for instance to the Crimea, but the same politicians consider NATO's enlargement of its territory into many former Russian states to be no issue.

Another example from real life: a jealous husband and his wife, where the husband is always trying to seduce other women, while he does not even allow his wife to dance with another man. Even worse: he refuses to dance, but does not allow his wife to dance with somebody else.

Example 10.25 (Applying double standards). (van Hoesel [2])
A father to his son: you pay too much attention whether your girlfriend is beautiful; the appearance is not important, only the inner self is. The son answers: I find her so charming! The father replies: That is because of the make-up she is using. The son:

But you said that only the inner self is important and not the appearance. So, the father argues that his son's girlfriend is charming because of her appearance, using make-up, while he just said that the appearance is not important.

Two friends decided to go to a football match, but forgot to decide who would buy the tickets. So it happened that each of them bought two tickets. When they discovered their mistake, they blamed each other for not having informed the other about buying the tickets. None of them saw that the argument could be reversed against themselves.

In one and the same conversation the director of a company, in discussion with his wife, argues that the fact that they spend a lot of money is useful because it stimulates the economy and provides employment opportunities. But when his wife argues that the employees should have a higher salary, the same man argues that this would only mean that they will waste their money.

I have experienced several times in a city council that one has wasted lots of money for projects which were doomed to failure, as has become clear afterwards, while refusing to spend money for useful projects on the basis that there was no money for it.

Applying double standards is even evident in daily language, as shown by the following examples:
When a man dates many women, he is an interesting Don Juan, a womanizer. But when a woman dates many men, she is immoral and a slut.
A man who is not married is a bachelor. But when a woman is not married, she is an old spinster.
A man in his forties is in the prime of his life. But a woman of that age is already an older lady.
A man who spends much money is called generous. When a woman does the same she is called wasteful.
If a man argues strongly in an exalted tone, he is called masculine. But a woman doing the same is called quarrelsome.

When one hears the production of atomic bombs defended by the argument that it gives employment to many people, this argument does not contain an inconsistency. That this argument is not convincing may be made clear by applying the same argument to another situation: destroying whole cities is useful because it gives employment to many people. In this way it hopefully becomes clear that the person in question is applying double standards.

10.2.12 Rationalizing

People want something, frequently based on unconscious premature judgments or habits, and next try to give more or less good reasons to support this position; however, these reasons are not convincing or are not the real motives. The notion of rationalizing is best explained by the following anecdote: there once was a fox that

lost its tail and then told itself and the world that tailless foxes are much more fashionable.

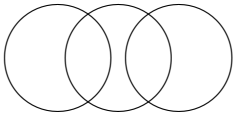
Example 10.26 (Rationalizing). A simple example is the following: a husband is pretty lazy and likes to read the newspaper and watch TV when he comes home. His wife is tired and asks him to do some shopping. The man reacts by saying: my darling, you look a bit pale today, I think it would be good for you to make a small walk to the shopping center. His wife replies: yes, you might be right.

Needless to say that this fallacy frequently occurs in political decision making. Politicians want something, frequently based on private hobbies and premature judgments, and do their very best to find all kinds of more or less reasonable arguments to motivate their proposal, usually carefully remaining silent about their real motives. One frequently sees that they, confronted with new facts and counterarguments, do not want to give up their premature judgments and do everything to spasmodically maintain their original position. By doing this their premature judgment becomes a prejudice.

Prejudices are the result of emotional and practical needs such as certainty, safety, security, appreciation, physical well-being and to preserve what is familiar. These needs and desires bring us as it were automatically to accepting certain viewpoints and opinions, which are certainly not the result of critical analysis. In this context one may be reminded of the saying: the wish is father to the thought.

Thinking is not a matter of our intelligence alone, but the whole human being is involved with all his emotions and premature judgments. As a member of a certain class, religion or group everyone has unconsciously built up certain premature judgments which seem to be self evident and have never been submitted to critical analysis.

Strong prejudices are even able to reduce or eliminate critical thinking of (very) intelligent persons, as becomes clear from the following little experiment. A group of students is asked to judge the correctness of the following two arguments:
1. Because many people from Israel are hospitable and many hospitable people have a good character, many people from Israel have a good character.
2. Because many Jews are warlike and many warlike people are slavish, many Jews are slavish.
Both arguments have the same structure and are evidently not correct.



The left circle represents the people from Israel, respectively the Jews; the middle circle represents the hospitable, respectively the warlike people; and the right circle represents the people with a good character, respectively the slavish people. Clearly, the two outer circles may have nothing in common.

However, many people who are sympathetic towards Israel will judge the first argument as correct and the second one as incorrect, while many people who have

a prejudice against Israel will judge the first argument as incorrect and the second one as correct.

So, the human being with a prejudice is not aware that his conviction is the result of his own desires and needs. Since the real reasons for his opinion remain hidden for himself, he will unconsciously create certain reasons or arguments. This process is called *rationalizing*: the rational or reasonable foundation of an opinion or conviction, which is essentially based on irrational grounds.

Example 10.27 (Rationalizing). (van Hoesel [2])
Sometimes the prejudiced person will try to maintain his prejudice with the most contradictory arguments, as for instance in the following example which illustrates the saying: it is an easy thing to find a staff to beat a dog.
X What I do not like about Jews is that they only look at their own group.
Y I doubt whether you are right. It turns out that they give relatively more money to charities than non-Jews.
X This only proves that they try to buy the favor of mankind by giving money. Jews only think of money which is the reason that so many Jews are bankers.
Y Recent research has shown that the number of Jews in the banking world is negligible.
X That is the point. These people are not concerned with respectable matters.

Example 10.28 (Rationalizing). (van Hoesel [2])
When a large company wanted to introduce clocking (on/off), one of the employees came with a number of fundamental objections: 1. impairment of personal freedom; 2. people should be trusted; 3. to gain trust you first have to give confidence; 4. employees will also leave exactly in time. All these arguments against clocking look reasonable, but, no surprise, the employee in question was always too late, because he had problems leaving his bed in time.

10.2.13 After this, therefore because of this

A simple example of this fallacy is provided by people who argue that their headache has disappeared due to taking a paracetamol tablet. After taking the paracetamol, the headache disappeared and one concludes that it disappeared because of taking this medicine. The idea that the headache might have disappeared without taking paracetamol does not occur to these people.

This fallacy, in Latin called '*post hoc, ergo propter hoc*' (after this, therefore because of this) consists of assuming that a certain fact is a consequence of another fact, only on the basis that the one fact is chronologically later than the other fact. It occurs very frequently, also in modern times.

Example 10.29 (Post hoc, ergo propter hoc). Some more examples:
'Last ten years climate has changed; that must be a consequence of CO_2 emissions.'
That CO_2 emissions were earlier than climate change is hard to refuse, but that they are the cause of climate change is another question.

The sun always comes up after the cock has crowed, so the sun rises because the cock has crowed.

The inhabitants of some islands in the Pacific were convinced that lice keep people healthy. They had observed that many healthy people had lice, while sick people frequently do not have them. What they did not realize is that the lice run away from sick people because due to fever their temperature is too high for them.

Also commercials frequently suggest a causal relation only on the basis that the one follows chronologically on the other:

Example 10.30 (Post hoc, ergo propter hoc).
She was a wallflower, now she is engaged. She uses Lucia soap.

He was tired of being alone; now he is happily married. He signed up for our dating site.

You want to be happy too? Our car is the perfect one for you.

Many people, among them many doctors, believe that injections against influenza prevent them from having this disease, although many controlled experiments have shown that they were useless.

Example 10.31 (Post hoc, ergo propter hoc).
Smith became president. Next the economy flourished. So, the presidency of Smith was good for the economy.

Possibly the presidency of Smith was beneficial for the economy, but not necessarily so. The effect of politicians on the economy should not be overestimated. The economy may flourish for many other reasons, under any president.

Every cause always precedes its consequence, but not everything that precedes a result is a cause!

A similar mistake is when one concludes from the parallel occurrence of phenomena that one is causing the other. In Latin this fallacy is called *'cum hoc, ergo propter hoc'* (together with this, therefore because of this). A good example is the following one (van Hoesel [2]). Reliable statistics show that students who smoke in general have lower grades than students who do not smoke. Opponents against smoking will gratefully conclude from this that smoking is harmful for learning. However, one may also reverse this conclusion: lower grades are causing students to smoke. A third even more likely conclusion might be that students who like to be popular and to make a social impression will for that reason smoke and will avoid everything that might lead them to being mistaken for an eager beaver.

Example 10.32 (Cum hoc, ergo propter hoc). Some more examples:
When in a certain village some form of cancer statistically occurs more frequently than elsewhere, people may suggest that a particular factory in the neighborhood of the village is responsible for it. However, it might well be that the real cause is that the people in the village do not eat healthy for whatever reason.

The last 200 years the number of pirates has decreased and global warming has increased. So climate change is due to the fact that there are fewer pirates.

I was just thinking about you when the phone rang. That cannot be a coincidence.

10.3 Unfair Discussion Methods

Once more: the purpose of a discussion is not to be proved right, or to outdo, to force or to mislead the other, but to discover the truth or to reach an agreement through joint and ordered thinking. In this section we will point out and distinguish a number of unfair discussion methods in the hope of making the reader aware of them and to help the reader not to become the victim of so many unfair tricks that are used, consciously or unconsciously, in local councils, parliaments and other meetings.

10.3.1 Pushing someone into an extreme corner

There is a well known Dutch saying: whoever claims a lot, has to justify a lot. Consequently, if someone gives in to the temptation - under the influence of his emotions - to exaggerate his claim and thus take an extreme position, he often becomes defenseless against the arguments of his opponent. There are at least three ways in which one can be pushed into an extreme corner without being aware of it:

10.3.1.1 Pushing someone into an extreme corner by fighting him violently/emotionally

Example 10.33. As chairman of a faculty meeting I was confronted with a colleague who evidently was lying repeatedly. Becoming more and more irritated by his lying I was led to say explicitly that he was a liar. Everyone in the faculty meeting was upset that I used these words and that I did not trust the words of my colleague. Consequently, the members at the meeting demanded that I offered my apologies; the truth or falsehood of the claims of my opponent was not further considered.

10.3.1.2 Pushing someone in an extreme corner by saddling him with more than he said

Example 10.34. 1. In a debate about immigration, a politician argues for restrictions on immigration. One of his opponents replies with: so, you want to deport all foreigners from the country.
2. One evening a husband came home and asked his wife whether she had been able to put a button on his jacket. The reaction of his wife was astonishing: You think I have nothing else to do than putting that button on your jacket! I worked all day, did shopping, had to prepare dinner, cleaned the house, etc.

The best reaction for the politician is to make clear that he did not claim the things his opponent said. The same holds for the husband. But - being irritated - the husband may be tempted to say that his wife with a little bit more efficiency would have been able to do what he hoped for, in which case the atmosphere in the family would only become worse.

10.3.1.3 Pushing someone into an extreme corner by drawing improper consequences from his statement

Example 10.35. In a discussion between a politician and businessmen, one of the businessmen was arguing for more roads because there are so many traffic jams. The reply of the politician was simply: sir, we cannot asphalt the whole country!

Clearly, the proposal of the businessman does not lead to the ultimate consequence that the whole country has to be asphalted. But the discussion was closed and the businessman gave up instead of making clear to the politician that his conclusion was inappropriate. Also nobody in the audience of more than one hundred people made any objection.

10.3.2 Straw man argument

By misrepresenting the position of a speaker, it becomes easy for the opponent to knock the speaker down. However, in fact the opponent does not refute the statement of the speaker, but he creates another and frequently much stronger statement which may easily be refuted, akin to the way that it is easy for a boxer to knock down a straw man. For this reason this unfair discussion method is also known as the *straw man argument*. The problem is that the position dismissed by the argument is not the real one, but only a caricature of the real position. In such cases the best strategy is to state explicitly: I did not say that.

Example 10.36 (Straw man argument).
A scientist submits a paper for publication in which an argument A is presented. The referee who has to judge whether the paper is suitable for publication, misinterprets the paper and believes that another argument B is presented. He then shows that argument B is incorrect or nonsense and subsequently recommends rejection of the submitted paper. In such a case the paper is rejected with a straw man argument.

Schopenhauer [4] calls this *extension*: carrying your opponent's proposition beyond its natural limits, so as to exaggerate it. He gives the following examples:

> I say that the English were supreme in drama. My opponent attempts to give an instance to the contrary, and replies that it is a well-known fact that in music, and consequently in opera, they could do nothing at all. I repel the attack by reminding him that music is not included in dramatic art, which includes tragedy and comedy alone. This he knew very well. What he did was try to generalize my proposition so that it would apply to all theatrical representations, and, consequently, to opera and then to music, in order to defeat me.

> Lamarck states that the polyp has no feeling, because it has no nerves. It is certain, however, that it has some sort of perception; for it advances towards light by moving in an ingenious fashion from branch to branch, and it seizes its prey. Hence it has been assumed that its nervous system is spread over the whole of its body in equal measure, as though it were blended with it; for it is obvious that the polyp possesses some faculty of perception without having any separate organs of sense. Since this assumption refutes Lamarck's position, he argues:
> *In that case all parts of its body must be capable of every kind of feeling, and also of motion,*

of will, of thought. The polyp would have all the organs of the most perfect animal in every point of its body; every point could see, smell, taste, hear, and so on; in fact, it could think, judge, and draw conclusions; every particle of its body would be a perfect animal, and it would stand higher than man, as every part of it would possess all the faculties which man possesses only in the whole of him. Further, there would be no reason for not extending what is true of the polyp to all monads, the most imperfect of all creatures, and ultimately to the plants, which are also alive, etc., etc.
By using dialectical tricks of this kind a writer betrays that he is secretly conscious of being in the wrong. Because it was said that the creature's whole body is sensitive to light, and therefore possessed of nerves, he makes out that its whole body is capable of thought. [Schopenhauer [4], Section 1]

10.3.3 Diversion maneuvers

In discussions it frequently happens that one tries to take someone away from his proposition, consciously or unconsciously, in a way similar to that of the young boy who came home with a great rip in his new pants and proudly showed to his mother the beautiful chestnuts which he had collected, hoping that she would not notice the rip. Below we present some of the methods used to embarrass someone.

10.3.3.1 Red herring argument: distracting someone from his original theme by moving the discussion unnoticed to another area

Changing the subject or diverting the argument from the real question at issue to some side-point is also known as a *red herring argument*. A red herring is a tactic to divert the opponent and/or audience from the relevant issue. A frequently heard example is this one: why should I pay for driving a few kilometers too fast; the police should chase dangerous criminals, not a decent tax payer like me.

Unlike the straw man argument, a red herring argument does not involve any misrepresentation of an opponent's position, but it concerns the introduction of a completely different issue which is not, or is only slightly, related to the real issue in question.

Example 10.37 (Red herring). (van Hoesel [2])
At a meeting of the elementary school board with the parents of the pupils, a mother asks one of the teachers about his opinion in the dispute between herself and her husband about beating their child because it had stolen some money. The teacher recognizes that the question is whether beating is admitted as a punishment. But instead of answering this question, he starts to talk about the punishment problem in more general terms, saying that the conscience of the child sometimes has to be corrected by punishment and that punishment is a translation from an ethical condemnation to empirical reality.

If the speaker continues to talk about this more general topic, illustrating more or less interesting aspects of the punishment problem, occasionally making a small joke, the woman in question will go home very satisfied and only realize later that the teacher in fact did not answer her question.

Example 10.38 (Red herring).
In a public debate with the mayor of the town the complaint is put forward that there is too much crime. The mayor then answers: well, this town has lots of problems, among which is also the housing shortage problem. But currently we are in conversation with cooperations to build new social housing. So, we are actually doing something about it.

Personally, I have experienced in many meetings of the faculty, the university and the city council that people frequently do not react to what might be strong arguments, they simply ignore them and pretend they did not hear them. This is usually a sign that they do not have appropriate counterarguments.

The College of Mayor and Aldermen is obliged to answer written questions of a council member within six weeks, and they do react within this period. However, frequently what they write is not an answer to the question! In such cases Schopenhauer [4] gives us in Section 34, Don't let him off the hook, the following advice:

> When you state a question or an argument and your opponent gives you no direct answer or reply, but evades it by a counter-question or an indirect answer (or some assertion which has no bearing on the matter, and, generally, tries to turn the subject), it is a sure sign that you have touched a weak spot, sometimes without knowing it. You have, as it were, reduced him to silence. You must, therefore, urge the point all the more, and not let your opponent evade it, even when you do not know where the weakness which you have hit upon really lies. [Schopenhauer [4], Section 34]

10.3.3.2 Distracting someone from his original theme by concentrating one's attack on one minor argument

If one has a number of arguments in favor of a certain proposition, one of the arguments may be a weaker one. Clever debaters may pick out this one weaker argument and with a great fanfare focus their attack on this minor argument. If they give a good show, they may achieve in this way that the strong arguments are forgotten and that they become the 'winner' of the discussion.

Example 10.39. (van Hoesel [2])
In a discussion about admitting or forbidding alcohol one of the participants brings in the following arguments against a total ban on alcohol:
1. Thousands of people would become unemployed;
2. It would mean an attack on the liberty of people;
3. Alcohol may have a positive influence on the health of people;
4. A total ban will encourage illegal trade and alcohol abuse;
5. Many people are *used to* alcohol, alcohol is like a friend which they do not want to miss.
One of the participants, strongly in favor of a total ban, focusses his attack on the last weaker argument as follows: Your son may *be used* to biting his nails, but you will not stop telling him he should not do so. You may *be used* to smoking a lot, but you keep trying to quit smoking. Your neighbor *is used* to throwing his garbage into your garden, but you will never accept this. Summarizing, let us remain sober

(people laugh), that one *is used* to something does not mean that it is good and that one should not fight against it.

10.3.3.3 Distracting someone from his original theme by making an irrelevant objection

Example 10.40. (van Hoesel, [2])
A psychology professor has given a talk about the psychology of human resource management, in which he has emphasized the importance of showing respect and appreciation for the employees. Having given a number of good arguments to underpin this claim, he concludes with: summarizing, with one pat on the back you can achieve more than with thousand other measures. In the discussion following his presentation one of the attendees reacts as follows: mister chairman, I have not studied psychology, but I do not see myself walking through the factory giving pats on the back, taking my hat off for the employees, offering them cigars and cigarettes, bringing them coffee and tea in the morning and in the afternoon. (people laugh) Sorry, mister chairman, in this way one cannot run a company.

By taking the 'pat on the back' from the context and doing so in a humorous way, the attendee gets the laughers on his hand, but not the thinkers. This reminds us of Schopenhauer's [4] section 28: Persuade the audience, not the opponent, which was already mentioned in Section 10.2.3, Thinking simplistically.

10.3.3.4 Bluffing the community

Example 10.41. In the years 1970-1980 the idea emerged in the Netherlands that for students, from elementary school to university, it is social and emotional development that is most important; students may discover subject matters like number theory, language, history and geography themselves. Teachers who taught were in the way of both the emotional and the professional development of their pupils. The Dutch government from those days gave educational agencies plenty of room. These agencies sent out advisers on a large scale, who quickly spread the new insights. By working according to these new insights and the associated methods, the content level of education would improve.

An advisor explains to a group of teachers that explanations of any sort may last at most twenty minutes. The advisor himself takes more than one hour. A teacher asks for attention to the way in which the content of subjects can still be brought to the fore within the outlined framework. He expresses his serious concerns. The consultant blames the teacher for interfering with the process that his colleagues are going through. Also, this teacher apparently has no eye for the real interest of his students. Teachers like him are subject matter-oriented, while the proper attitude is student-oriented. Almost all colleagues remained silent, school directors almost always chose the side of the advisors. Impure methods like these have caused great suffering for many teachers (and students).

10.3.3.5 Distracting someone from his correct conclusion by pointing out a mistake in his argument

As we already know from Chapter 1 an invalid argument may have a true conclusion when its truth does not depend on the truth of the premisses, but on other facts. So, it may happen that a speaker is drawing a right conclusion, but gives a wrong argument as in the following example (van Hoesel [2]).

Example 10.42. All planets are round. The earth is round. So, the earth is a planet. Every rectangle has four right angles. A square has four right angles. So, a square is a rectangle.

One may point out that the argument is invalid by remarking that a similar argument would be: all men have two eyes; an ape also has two eyes; so, an ape is a man. Nevertheless, the conclusion of the prior arguments is true, although its truth is not based on and independent of the given premisses.

Example 10.43. (van Hoesel [2])
An engineer who just got a position at a certain firm concludes that he will belong to the management, because the managers have four weeks of vacation and he himself does too. His partner makes him doubt by pointing out that his argumentation is invalid; because a similar argument would be: the managers are wearing shoes and all employees are wearing shoes, so all employees are managers.

Again, the conclusion may be true, but if so, its truth does not depend on the given argument.

10.3.4 Suggestive Methods

There are three ways to bring people to accept our insights and objectives: by forcing them, by persuading them (but not by using good arguments) and by convincing them (by honest, proper and relevant arguments). The difference between being convinced and being persuaded is that in the first case one plays a more active role in the process (agreeing happily) than in the second case where one plays a more passive role. In this section we will analyse some discussion methods which have in common that the most important factor in bringing about an insight or opinion is not the quality of the argument used, but suggestive influence of one of the following kinds:
1. by using terms with tendentious emotional value or biased connotation;
2. by exploitation of certain thinking habits;
3. by abusing the analogy reasoning;
4. by all kinds of suggestive tricks.

10.3.4.1 Using terms with tendentious emotional value or biased connotation

Example 10.44 (Words with biased connotation).

protestants	heretics
alteration	innovation
existing order	antiquated prejudice
public worship	piety/godliness
system of religion	bigotry/superstition
the priests	the clergy
placing in safe custody	throwing into prison
an equivocal story	a bawdy story
religious zeal	fanaticism
through influence and connection	by bribery and nepotism

The difference between the objective and emotional meaning of a word becomes evident when one puts the words next to each other. For instance, in the sequence alcoholic – drunkard – boozer the meaning of the first word is a purely objective one, but the last word in addition expresses that the person who used it has already chosen a position.

Words with a tendentious emotional value can often be found in all kinds of political, moral and religious discussions.

Example 10.45 (Terms with biased connotation).
The city council was discussing building a new shopping mall at the border of the town and objections were raised that this might have disastrous consequences for the shopkeepers in the city center and hence for the city center itself, because many shops there would simply disappear. A representative of the labour party said that the shopkeepers are just tax evaders, so for him there was no problem at all.

Emotional words are frequently used in the political sphere. One can easily see this by reading how different newspapers report one and the same event. One newspaper calls a mistake of a minister in parliament a somewhat unfortunate mistake, while another newspaper calls it deliberate deception of the people.

Note that many initially completely neutral words can get an emotional connotation over time. Examples are the words workman and cleaning woman, who nowadays are called employee and interior caretaker, respectively.

In the public domain one really plays with words in order to make a positive impression. Since the word progressive for many people has a positive connotation, left-wing parties call themselves progressive, suggesting that they are focused on the future and go along with their time, thus ignoring the fact that one must keep the good things and only needs to correct or adapt what goes wrong.

If in a discussion many emotional terms are used, one should be careful: frequently these emotional terms are misused to mask bad argumentation. In such cases one should try to replace the emotional terms by more neutral expressions and see what remains of the argumentation. Van Hoesel [2] illustrates this with the following example of a discussion between a host and his guest.

Example 10.46 (Terms with biased connotation). (van Hoesel, [2])
Host: At Sundays I always like to drink a whisky before dinner; and I am fond of it.
Guest: Do you realize how much misery alcohol is causing to the world. Whole families and cultures have been destroyed by this poison. See how many human wrecks are walking in our big cities. Our psychiatric hospitals are overcrowded with victims of alcohol. Alcohol is causing a strong increase in criminality and sexual offences. I am deeply shocked by your statement that you enjoy your whisky so much.
Host: My dear friend, your words have impressed me. I will stop drinking.

In a less emotional and more business-like atmosphere this conversation would most likely have proceeded as follows:
Host: At Sundays I always like to drink a whisky before dinner; and I am fond of it.
Guest: You will have to admit that *misuse* of alcohol causes serious physical and mental problems.
Host: I fully agree! That is why I only take one.

Schopenhauer [4], section 32, points out that one may get rid of an assertion one does not like, or at any rate throw suspicion on it, by putting it into some odious category, even if the connection is only apparent or of a loose character. One might say for instance: that is Machiavellism, or Arianism, or Pantheism, or Atheism, or Spiritualism, or Ultra-Right, all words with a biased connotation. In making an objection of this kind, one essentially cries out 'Oh, I have heard that before' and one suggests that the system referred to has been entirely refuted and does not contain a word of truth.

10.3.4.2 Exploitation of certain thinking habits

It is not difficult to see that many of our thinking habits are based on incorrect and emotionally-based generalizations which we have already treated in Section 10.2.2. In this section we want to point out that our thinking habits may weaken our critical insight and make us vulnerable for suggestive influencing. For instance, we are used to talk about Russia as warlike and aggressive, which is exploited by our Western politicians without any scruples and without any attention for the way Russia looks at the West. A good example is the so called annexation of Crimea by Russia, where in fact the citizens of Crimea requested Russia to protect them against Ukraine, because they preferred to remain Russian. In addition, it is almost certain that if Russia had not taken Crimea, NATO would have built a naval base there.

Speakers in public - with the exception of a few good ones - rely more on the basis of our emotions and prejudices than on our common sense and critical insight. A smart speaker who, for example, wants the public to accept a dubious proposition, first formulates a number of propositions that are readily accepted by the public and only then presents his dubious proposition. As soon as used to nodding yes, chances are that they will not even think about the last questionable statement and nod again. For example, in a meeting of school teachers, the speaker may start by pointing out that the salaries have not been raised for many years, that the classrooms are getting bigger and bigger, that the pressure on the teachers is increasing and that their job

is becoming more and more demanding, before eventually formulating his dubious proposition, like, for instance, that school teachers deserve a 10% salary increase. After saying so many things that the teachers can not disagree with, they will also be happy to accept his more dubious statement.

This technique is perfectly demonstrated by quacks at the market, for instance. They present a pseudo-scientific argument in which they formulate many propositions which are easily accepted by the general public. Since people are inclined to believe a person who proclaims their views, they will easily accept the dubious proposition at the end of the argument. Van Hoesel [2] gives the following example of such a quack.

Example 10.47 (Exploitation of certain thinking habits). (van Hoesel [2])
Ladies and gentlemen, we all know that the mind has a huge influence on the body. Did you have fear in the past? What did you feel? Precisely, that your heart beats faster. And what if you have suffered a great loss? Right, you start to cry, the tears come out. The mind affects the body. And perhaps you know someone who was paralyzed and could walk again under the influence of a strong emotion. The influence that body and mind have on each other is so strong. There are no physical illnesses and there are no mental illnesses, there are only sick people. Whether you suffer from nervous breakdowns, rheumatism, stomach- or head-aches, it really does not matter that much. Because in our laboratory - after many years of experimenting - we have discovered a method that can cure all your diseases, physically or mentally. Panasulfakin heals body and soul for the price of a doctor's visit. Thousands of fellow citizens owe their health to Panasulfakin.

10.3.4.3 Abusing the analogy reasoning

An analogy may be used to *clarify* something, like in the following example: The circulation of money for the well-being of the economy is like the circulation of the blood for the well-being of the body.

However, an analogy may also be misused when one tries to *prove* something. In such a case, one usually points out that two items have some properties in common and next one concludes that the second item has in addition another property of the first item.

Example 10.48 (Abusing the analogy reasoning). (van Hoesel [2])
Family doctor: You just said that your son already visited several doctors; nevertheless I advise you to consult a psychologist.
Father: No way! Look, I have a motorbike. If one mechanic pours Shell oil in it, a second one Renault oil and a third one again another oil, then my motor goes on the fritz. The more people mess with my son, the more they'll ruin him.

Although in this example a human being and a motorbike have some things in common, it goes too far to conclude that what is bad for the motorbike is also bad for a human being. The family doctor might have made clear that the analogy is inappropriate by suggesting the father to pour some oil in his son and to kick-start him.

Example 10.49 (Abusing the analogy reasoning). (van Hoesel [2])
Probation officer: Believe me, you will get a good craftsman.
Employer: maybe, but I am not inclined to employ someone who was in prison for theft. My father used to say: once a thief, always a thief.
Probation officer: Listen, your saying says nothing. On the contrary: no person wants to be more honest than the one who comes from jail for theft. Look: if you return from hospital after having fallen from the roof, would you climb on the roof again? No way!

In this example there is little analogy between thieving and falling from a roof that would allow one to draw any conclusion. Such forced analogies are frequently used in public or political speeches and in commercials, like in the following example.

Example 10.50 (Abusing the analogy reasoning). (van Hoesel [2])
A market vendor with a hoarse voice was trying to convince the public of the excellent qualities of his cough medicine. Colds, cough and bronchitis were according to him nothing else than dirt that had settled on the chest. In order to illustrate this he showed a glass of troubled water, and said that if he would not do anything, it will remain troubled forever. However, by pouring a bit of cleaning liquid in the glass, the water became crystal clear. He promised his audience that by taking three spoons of this liquid per day, their chest would become as clean as his glass of water.

That the reactions of a living being are very different from an anorganic reaction did not occur to his audience; the market vendor was doing good business.

Example 10.51 (Abusing the analogy reasoning). (van Hoesel [2])
A temperance advocate finished his speech by saying that liquor is not only bad for the mind, but also for the body, illustrating this by dropping a rain-worm in a glass of liquor. Indeed, the result was convincing, after a few seconds the rain-worm was as dead as a doornail. I cannot, he continued, give you a more convincing demonstration of the destructive effect of alcohol.

Of course, there is some similarity between a rain-worm and a human being: both are living beings. But this does not mean that what is bad for the rain-worm is also bad for a human being. In addition, the rain-worm was literally drowned, which would also have happened had the speaker used a glass of milk. One of the attendees was smart enough to realize these facts and drunk the glass of liquor with the excuse that he was troubled with worms.

Example 10.52 (Abusing the analogy reasoning).
Guns are like hammers: they are both tools with metal parts that could be used to kill someone. It would be ridiculous to restrict the purchase of hammers, so restrictions on purchasing guns are equally ridiculous.

Restrictions on the purchase of guns may be justified because they can easily be used to kill large numbers of people at a distance; this feature is not shared by hammers.

10.3.4.4 Suggestive tricks: using authority; suggestive influence of incomprehensible words; Argumentum ad Populum

A frequently used trick to suggest that a statement is true is to appeal to authority or prestige. This authority may be legitimate, but it may also be fictitious or pretended. When, for instance, a university professor in physics formulates a physical proposition, it is more than reasonable to accept its truth. However, when the same professor in physics formulates a proposition about some social problem, then we may attribute no more value to his claim than to the claims of other personalities of the same level and with the same level of information. The physician, the vicar, the pastor, the notary, to mention just a few examples, have for many people also authority on topics which have nothing to do with health, religion, morality and financial affairs, respectively. A similar thing holds for popstars when they make statements about political or social issues; their opinion has no more value than the ones uttered by arbitrary persons of the same intellectual level and competence.

Authority arguments are frequently used in practice, even in the scientific world.

Example 10.53 (Authority argument).
A PhD student had submitted a complaint to the national body of scientific integrity that the comments of a certain professor were inaccurate and careless. The professor in question replied in a letter to this body as follows: I want to draw your attention to the fact that I am the main editor of a journal of high reputation. Therefore you better take my opinion seriously.

When a person is an authority in a particular field he may also misuse this authority to intimidate others. Van Hoesel [2] gives an example of a university professor in psychology who gave a talk about the psychology of the factory girl. One of his students asks whether the factory girl does exist. To which he replies with 'I do not understand your question', making the student seem ridiculous. But the student is probably right that one cannot speak about *the* factory girl. By pretending he does not understand the student's question, the university professor insinuates to the bystanders, with whom he is in good repute, that what the student says is nonsense. The counter-trick for the student might be to admit that she might not have formulated her question clearly, but that when one compares a factory girl in a small bakery with a factory girl in a large Philips factory there may be more differences than similarities and that consequently it is unclear whether one can speak about the psychology of *the* factory girl. She might even add: with your intelligence it must be easy for you to understand this question.

Schopenhauer [4] gives another example:

> Thus, when Kant's Kritik appeared – or, rather, when it began to make a noise in the world – many professors of the old eclectic school declared that they failed to understand it, in the belief that their failure settled the business. But when the adherents of the new school proved to them that they were quite right, and had really failed to understand it, they were in a very bad temper. [Schopenhauer [4], section 31]

The suggestive effect of authority does not always have to be based on social position, title or the name of the speaker, but one may also successfully obtain authority

by using incomprehensible quasi-scientific terminology. It is amazing how many people consider incomprehensible and complicated terminology as scientific and interesting, while in fact it is only a mush of words. Some even claim that philosophers like Hegel and Heidegger are of this kind, but it may be that they did not spend enough time to study these authors properly. It is staggering to see how great the suggestive influence of incomprehensible words can be and how easily a belief in words arises. Management jargon, for instance, is an inexhaustible source of incomprehensible and quasi-scientific use of language.

Example 10.54 (Suggestive influence of incomprehensible words).
1. The unconscious Will of Nature eo ipso presupposes an unconscious idea as goal, content or object of itself. ... Instinct is defined as a purposive action without consciousness of the purpose. ... Instinct is conscious willing of the means to an unconsciously willed end. [Wilm, E.C., The Theories of Instinct. Yale University Press, 1925, pp. 135,139]
2. The prohibition on incest is in origin neither purely cultural nor purely natural, nor is it a composite mixture of elements from both nature and culture. It is the fundamental step because of which, by which, but above all in which, the transition from nature to culture is accomplished: the prohibition of incest is where nature transcends itself. [Lévi-Strauss, e.a., The elementary structure of kinship. Beacon Press, Boston, 1969, p. 24]

Sentences like these cannot be tested and have no clear meaning, which also means that no one can show that they are false. At the same time the authors of such sentences present themselves to be profound.

Example 10.55 (Suggestive influence of incomprehensible words). (van Hoesel [2])
A party-ideologist, at a party meeting at the end of his exposition about inflation, finishes enthusiastically with the words: We do not want *in*flation! We do not want *de*flation! But ... we want *re*flation!!! Followed by enthusiastic applause.

When someone after the meeting asked the speaker what he meant by reflation, his answer was: I do not know, but ask it to the people in the audience, because they seem to have understood it.

Evidently, in many cases people are satisfied with words they have gotten from persons with a certain authority. Incomprehensible secret language is one of the methods to seem important. D. Sperber calls this the Guru effect:

> All too often, what readers do, is judge profound what they have failed to grasp. Obscurity inspires awe, a fact I have been only too aware of, living as I have been in the Paris of Sartre, Lacan, Derrida and other famously hard to interpret maîtres à penser. ... Still the epidemiological mechanism I have briefly sketched, explains how many obscure texts and their authors come to be overestimated, often ridiculously so, not in spite but because of their very obscurity. [Sperber, D., The Guru effect. Review of Philosophy and Psychology 2010, pp. 583, 592]

Schopenhauer [4] points out that a universal prejudice may also be used as an authority. Using an appeal to popular assent is also called an *Argumentum ad Populum* (argument to the people). Such an appeal asserts that, since the majority of people

believes an argument or chooses a particular course of action, the argument must be true or the course of action must be followed. Nowadays one sees this phenomenon in Western Europe, where wind-mills to generate electricity are built at a very large scale, although it is pretty clear that the enormous costs cannot outweigh the return.

> There is no opinion, however absurd, which men will not readily embrace as soon as they can be brought to the conviction that it is generally adopted. ... They are like sheep following the bellwether wherever he leads them. They would sooner die than think.
>
> It is very curious that the universality of an opinion should have so much weight with people. Their own experience might tell them that its acceptance is an entirely thoughtless and merely imitative process. But it tells them nothing of the kind, because they possess no self-knowledge whatever. ...
>
> To speak seriously, the universality of an opinion is no proof. In fact, it is not even a probability that the opinion is right. [For instance, almost all people once have thought planet earth was flat, but that majority's belief did not mean the earth really was flat.] ...
>
> When we come to look at the matter, so-called universal opinion is the opinion of two or three persons. We should be persuaded of this if we could see the way in which it really arises. ... [A few persons who select the news to be broadcasted and next more and more people are spreading the word.] ...
>
> When opinion reaches this stage [of universal acceptance], adhesion becomes a duty. Henceforward the few who are capable of forming a judgement hold their peace. Those who venture to speak are entirely incapable of forming any opinions or any judgement of their own, being merely the echo of other's opinions. Nevertheless, they defend them with all the greater zeal and intolerance. For what they hate in people who think differently is not so much the different opinions which they have as the presumption of wanting to form their own judgement. In short, there are very few who can think, but every man wants to have an opinion; and what remains but to take it ready-made from others, instead of forming opinions for himself. [Schopenhauer [4], section 30]

A particular type of argumentum ad populum does not assert that everybody is doing it, but rather that all the best people are doing it. For instance: any true intellectual would recognize the necessity for studying logical fallacies. The implication here is that anyone who fails to recognize the truth of this assertion is not an intellectual.

10.3.4.5 Suggestive tricks: repeating oneself, speaking confidently, suggestive questions

One would be surprised to realize how many of our ideas, views and convictions are in the end the result of commercials and propaganda. The media (TV and newspapers) get much of their information from the local and national governments, journalists have little or no time for research and almost everyone parrots what they have heard elsewhere. Consequently, many things are de facto not what they seem to be. For instance, religious Christian leaders in Syria give a completely different picture of the situation in their country than we are told by the mainstream media. In what follows, we discuss some of the more important tricks of persuasion.

Repeating oneself

We have the tendency to start to believe statements which are repeated again and again, either literally or with slight modifications. Repeating things is a well known

method to learn addition and multiplication, to learn French, but also to learn playing piano, etc. The speeches of Hitler, for instance, always had the same topics: the Jews, Gross Deutschland, die Partei, frequently presented in small variations. In the following example the speaker repeats several times more or less exactly the same thing without any convincing argument. Nevertheless, these repetitions suggest that what is said is absolutely true and that any further discussion is superfluous.

Example 10.56 (Suggestive repetitions). (van Hoesel [2])
Poverty is a lack of social adjustment. The economically weak are the ones who were not able to adjust to the social demands put on them. They are biologically less gifted than the working people, who were able to bring about such adjustment.

Speaking confidently Frequently people try to eliminate the critical attitude of their audience by speaking (very) confidently. A more modest speaker is frequently not taken very seriously, in particular if the audience is large. In political speeches, for instance, addressed to a large audience, the speaker will usually speak very confidently in order to prevent the audience from thinking that he has little or no knowledge or that his views are poorly substantiated.

Suggestive questions Questions are suggestive if they – by the way they are asked – actually suggest the answer.

Example 10.57 (Suggestive questions).
You certainly also buy a lottery ticket for the animal protection?
You will certainly agree with the usual 10% fee?
In a shop: you will certainly take it with you, madam? Instead of: do you want it to be delivered at home?

One may distinguish:
1. *The implying question* For instance: although the car which caused an accident, taken into custody by the police, does not have an antenna, the officer might ask: was the antenna of the car on the bonnet or on the roof?
2. *Question which contains a dilemma* For instance, although the car in question is green, the officer might ask: was the car black or red?
3. *Expectation question* For instance: he certainly drove too fast?
4. *Complex question* For instance: Did the driver give way, use his direction indicator and drive at the right side of the road, yes or no?

Another well-known example is the question: have you stopped beating your wife? Whether you answer this question with yes or no, in both cases you admit that you have beaten your wife before, because this question presupposes that you did so; see Section 7.11. In fact this question consists of two questions rolled into one: a) Did you beat your wife in the past? and b) If so, did you stop beating her?

Complex questions appear in written argument frequently. A student might write a bachelor thesis with the title 'Why is private development of resources so much more efficient than any public control?'. An observant reader may recognize that the prior implicit question, whether private development of resources really *is* more efficient in all cases, remains unaddressed.

10.3.5 Either/Or Fallacy

By the words we are using, we frequently make sharp distinctions which do not exist in reality. For instance, classifying people into rich and poor. However, when we would try to put ourselves into one of these two categories, many of us would notice that it is not really possible to do so. Similarly, in daily language we make sharp distinctions between beautiful and ugly, expensive and cheap, good and bad, intelligent and stupid, normal and abnormal. As already pointed out by the Dutch Significists, among them G. Mannoury and L.E.J. Brouwer, there are gradual transitions between these two extremes; see Section 7.3. Nevertheless, in discussions about a certain problem, people are frequently placed in front of a dilemma, while in fact there is no dilemma. In such a case, two extreme alternatives are offered to choose from, while in fact there is a whole range of possibilities. For instance: are you my friend or my enemy? Is he normal or abnormal? Are you healthy or sick?

Example 10.58 (Either/or fallacy).
Yesterday you criticized the Israeli government. But then you are an anti-semite. So, do you want to be an anti-semite or do you retract your comment?

The unfair element is that there is a whole range of possibilities between anti-semitism (hating *all* Jews) and disagreeing with *one* decision of the Israeli government.

Conversely, one may accentuate the gradual transition to explain away the difference between two different things.

Example 10.59. (van Hoesel [2])
Boss: John, you were ten minutes too late at work this morning.
John: If I would have been one minute too late, would you make a point of it?
Boss: Of course not.
John: And if I would have been two minutes too late?
Boss: I would not say anything.
John: And if these two minutes were three minutes?
Boss: Okay, I could live with that.
John might continue this way to conclude that there is no reason at all to blame him for anything. But the boss would nevertheless finish the conversation with: either you are on time or you are too late!

In a similar way one might try to explain away the difference between a small group of people and a crowd, by pointing out that one person more does not change a small group of people into a crowd. By this kind of reasoning one may cheat not only someone else, but also oneself.

10.3.6 The treacherous paradox

In this subsection we shall illustrate the disastrous influence that a paradox may exert on our critical thinking. In Section 10.3.4.3 we have already seen that using an

analogy can have a paralyzing effect on our intellectual activity, probably because the analogy largely meets our laziness of thinking. No man is born as a good thinker, and without effort no one will probably ever learn to think well and clearly.

If one wants to sell a dubious position, one has to present it in the form of a paradox and one will notice that it is readily accepted.

Example 10.60 (Treacherous paradox). (van Hoesel [2])
A group of people discusses the education of children between say 15 and 20 years old. Some of them argue that one should give these children a lot of freedom, while others argue that too much freedom may have disastrous consequences. One of the participants, defending the larger freedom, summarizes the discussion in the following paradox: he who wants to hold his children must let them go.

Why is this paradoxical statement so convincing? First of all, because it suggests an (apparent) reconciliation between two different points of view, causing a kind of Eureka experience. In addition, since this paradoxical statement also seems to do justice to both points of view, everyone has the impression that his or her point of view has been taken into account. In the second place, this paradox suggests objectivity and distinction. Finally, the paradox caters to the laziness of thinking of the people involved.

Example 10.61 (Treacherous paradox).
A perfect organisation may be an organized chaos.
It takes a lot of reason to find something incomprehensible.
Strongly refusing outwardly means often accepting inwardly.
Less is more.
The voter is always right.

However, already the Roman writer Titus Livius ($\pm$ 10 CE) stated: but, as it mostly happens, the greater part overruled the better.

10.3.7 Ad Hominem Arguments

At the football field one sometimes hears fanatic supporters shout: first the man, next the ball. The reader may wonder what football has to do with argumentation. Well, there are many similarities: one sees many feints, tempers are often heated, the goal is often passed by, one does little with his head and cooperation is often lost. Similarly, in both cases one frequently gets personal.

When one has few or no arguments against a position defended by an opponent, one frequently jumps from the subject of discussion to the person in question, attacks him personally and tries to discredit him. This practice is fallacious because the personal character of an individual is irrelevant to the truth or falsity of the conclusion of the argument itself.

Example 10.62 (Ad hominem argument). (van Hoesel [2])
Mister X is in favor of Darwin's theory of evolution and mister Y opposes it, but

cannot find good counterarguments. So, he might ask the question: please tell me, do you descend from an ape from your grandmother's side or from your grandfather's side?

Another example of an ad hominem argument is: That plan cannot be good; he has not studied at a university. People, making remarks like this one, do not take the troubles to study the plan objectively and critically, again an indication of their laziness of thinking.

Example 10.63 (Ad hominem argument).
A local party LST in the Netherlands recently obtained the greatest number of seats in an election for the city council: 10 out of 45 seats, which means that almost 1 out of 4 voters had chosen for this party. Consequently, this party is entitled to form a coalition. However, one of the parties in the old coalition had – already before the election day – declared that they would not take part in a coalition with (the leader of the) LST, without giving any (good) reason. Interestingly, the party in question has the word democratic in its name! And since the other parties in the old coalition wanted to continue their cooperation, they did not want to form a coalition with LST either, in this way ignoring the votes of 22% of the citizens.

The same phenomenon occurred in several other cities in the Netherlands and also in the Dutch and Belgian parliaments, while anybody in any organization is supposed to cooperate with colleagues, even when they do not like each other very much.

Surprisingly, even in the academic world these ad hominem arguments are frequently used, in particular by referees of scientific journals and of proposed research projects.

Example 10.64 (Ad hominem argument).
This article might have been written by a beginning student.
The author of this PhD thesis is a charlatan.

Example 10.65 (Ad hominem argument).
A PhD candidate had written a thesis with a physical theory formulated in a logical mathematical language. Interestingly, this theory was inconsistent with the general theory of relativity. There was no claim at all that this theory was true. The thesis had been approved for defense by the PhD committee of the university. When the dean of the faculty learnt that this theory was inconsistent with general relativity, he sent the PhD thesis to a former classmate who had won a Nobel prize in physics with the request to have a look at it. Within a few hours his reply was there: *The idea of antimatter proposed in this thesis is inconsistent with the general theory of relativity, and in my opinion that can only mean that the PhD candidate has no clue whatsoever about what antimatter is; it would be a disgrace for the university to admit the candidate to the defense*. The dean decided to cancel the defense, even without consulting the two PhD supervisors, who spent weeks in order to be able to understand the formalism and the physical theory proposed.

Fortunately, later the PhD thesis was successfully defended at another university, the logical-mathematical part was published in a journal for logic and the physical

part was published in a journal for physics, both of the highest level. The Nobel prize winner saved himself a lot of time by not having to look more carefully into the thesis.

Example 10.66 (Ad hominem argument).
A committee of the faculty, consisting of three professors, had to judge a number of research proposals which had been sent to its members quite in time. At the day of the meeting it turned out that one of the committee members had not looked at the proposal submitted by his colleague in the committee. So he asked to show him the research proposal in question. He looked at the title and after a few seconds said: that cannot be something interesting. The third committee member did not want to intervene and the research project was not granted without it having been studied properly.

Example 10.67 (Ad hominem argument). (van Hoesel [2])
A professor in psychology writes a book about the education of children. Without reading the book, someone might argue: that book cannot be good! Look at his own son; he is the terror of the neighborhood.

A man got the advice from his specialist not to smoke anymore. But he ignored the advice completely, for the specialist himself was smoking a big cigar when he gave his advice.

When one is confronted with such a personal attack, Schopenhauer [4] gives us the following advice:

> As soon as your opponent becomes personal, you quietly reply 'That has no bearing on the point in dispute' and immediately bring the conversation back to it, and continue to show him that he is wrong, without taking notice of his insults.

10.3.8 Argumentum ad baculum

This is an argument in which the opponent is physically or psychologically threatened, as it were with a stick (ad baculum).

Example 10.68 (Ad baculum).
Father made him an offer he could not refuse (Michael Corleone in *The Godfather*).
Your remarks smell of racism.

This argument prevents the opponent to speak freely. Frequently the threat is implicit. And when one makes the insinuation explicit, the other party has always the possibility to deny the insinuation. This makes this argument a very nasty one.

Of course, not all arguments ad baculum are fallacious. For instance, a policeman may threaten someone with a big fine if he does not respect the traffic lights.

10.3.9 Secrecy

By declaring a certain agreement to be secret, one may prevent critical questions or even hide that the agreement is illegal.

Example 10.69 (Secrecy).
The so called presidium of the city council, consisting of the chairmen of the different parties in the city council, had reached a majority decision that retired former members of the council would get half-pay during a certain period. It was known that this was illegal. For that reason the chairman of a local party announced that he would make this majority decision public. By this threat the presidium decided by majority to declare the agreement to be secret. Nevertheless, the party-leader made the decision public. He was arrested for violating secrecy, had to spend one day at the police office, his and his family's computers were taken into custody and he was sentenced to a fine of 350 euros.

The other members of the presidium, the mayor and the aldermen were not sentenced at all, although they knew that they had made an illegal decision.

Example 10.70 (Secrecy).
The mayor and aldermen of the city asked the city council for more money for transforming a former cinema to a theatre. Because the budget was already more than ten million euros, they knew that many members of the city council would be very critical, to say the least. In order to convince them still to make more funds available they declared that there was a contract with an entertainment company for making television programs in the new theatre. The leader of one of the parties in the city council asked whether he could see this contract. However this was refused with the argument that they could not make a trade secret public. Again the party leader asked: may I see this contract? Again the answer was: no, we are not allowed to make this trade secret public. Later it turned out that there was no contract at all, that there even had been no contacts with the entertainment company in question.

The mayor and some of the aldermen were dismissed by the city council. However, within half a year they all had new similar positions.

10.3.10 The Retirement Home's Discussion

Imagine two old men on a bench next to each other, talking alternately about the local football club and the youth of today. They do not listen to each other, but only are concerned with their own argument which they bring forward again and again, each time in a different form. They only listen to themselves, not to the other person. 'A debate is a generally heated conversation, in which two people talk to each other and listen to themselves' (Jean de Boisson). One might think or hope that such conversations do not occur in business or scientific discussions. Unfortunately, they do! Attend, for instance, a meeting of the local city council or of the parliament. It happens more than once that one speaker supports his position with various arguments, while his opponent restricts himself to repeating his own position without going into the arguments of the first speaker. In such a case the discussion leader, usually the mayor, should ask the 'old man' what he brings forward against the arguments of his opponent. Frequently it will turn out that he does not know them and/or that he will say: that may be true, but I stick to my point of view. By the way, there are

mayors who do not care about the quality of the discussion and just wait till they are finished.

Another version of this phenomenon is *cherry picking*: only select evidence is presented in order to persuade the audience to accept a certain position, and evidence against this position is withheld. In other words, one picks the cherries one likes and ignores the cherries one does not like.

Example 10.71 (Cherry picking).
In the Netherlands there is an ongoing discussion about the future of the pension system, where it is difficult to find a balance between the interests of the younger people and those of the older people. Each group brings forward their favoured arguments, ignoring the arguments of the other group, even not mentioning them.

As we have already seen in Section 7.14 a statement may be true, but nevertheless not tell the whole truth and hence be misleading. For instance, if I answer your question whether I know a gas station because you are running out of gasoline and I answer 'yes, there is a gas station around the corner', I may be speaking the truth, but nevertheless be misleading if I know that the gas station is closed. The statement 'there is a gas station around the corner' together with simple *conversation rules*, like being relevant and maximally informative, *conversationally implicates* that the gas station is open.

As one may expect, politicians in particular are very good in telling truths that are misleading.

Example 10.72 (Cherry picking).
Politicians like to claim that they will solve a certain problem, for instance, great unemployment. But sometimes they forget to mention that they themselves were the ones who caused the problem in the first place.

10.4 Summary

One must keep in mind that our emotions, feelings and sentiments may have a strong negative influence on our thinking and that they can often overwhelm our critical thinking.

In the preceding sections we have treated a great number of mistakes which stand in the way of clear thinking and good discussion:
- An emotional thinker is frequently verbose, bombastic and theatrical, but at the same time inaccurate and vague.
- His words are tendentious, his definitions incoherent and meaningless.
- He simplifies the most difficult problems to meaningless formulas and he uses cliches as hand grenades.
- He starts with conclusions instead of finishing with them.
- He posits assumptions as established facts and he generalizes with the greatest ease on the basis of a few examples.
- He is a master in rationalizing his prejudices and he simply ignores evidence that

does not suit his purpose.
- He does not listen to the arguments of his opponent, but repeats his words again and again.
- He ascribes to his opponent assertions which he has never made.
- He draws extreme conclusions from moderate statements and creates dilemmas which do not exist.
- He camouflages his weak argumentation with a lot of words and he jumps from one subject to another.
- He makes objections that do not make sense and does everything to bluff to the audience.
- He poses suggestive questions and makes causal connections which are not realistic.
- He insinuates in a crude way and becomes all too easily personal.

All these fallacies and unfair discussion methods make us understand the complaint of Klemens von Metternich (1773-1859): Throughout my life I only knew ten or twelve people with whom it was pleasant to speak: who kept strictly to the subject, did not repeat themselves, did not speak about themselves, did not listen to their own words, were too civilized to lose themselves in commonplaces, and who had enough tact and good taste not to raise their own person above the subject.

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