

Lifting the Blindfold

A Practical Handbook of Critical
Thinking for Business



CTCP

DR. ALAN WOOD

Section 5: The Big Picture

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Overviews

There are a number of traps even when we attempt to look at a situation overall. The most common 'big pictures' which businesses utilise are averages, trends, sampling and surveys, and information visualisation. Each of these seems benignly straightforward and helpful at first sight. However, superficial consideration is unwise when these particular information types are also prime tools for trapping the unwary when developing market strategies and identifying further opportunities. The potential for wasted costs and energy is massive if the basic pitfalls of these four forms of data are poorly understood.

These 4 'big picture' sources are the start of overview development. Framing, batching, ratio bias and types of compromise conclusions are further complications which have to be identified and corrected.

5.1 Averages

After percentages, the notion of 'average' must be the most commonly abused and misused element of critical thinking for business. Here is a fact to contemplate: on average, a member of the human race possesses one ovary, one fallopian tube and one testicle. Already you might be suspecting that information preceded by the phrase 'On average' may be less helpful than might first appear.....

We do need to be ready to change our language in order to clarify our thinking and improve our analysis. There are three words which have to be understood and which represent three separate concepts:

1. **Mean** = TOTAL value of items/NUMBER of items (This is what is usually meant by **average**)
2. **Median** = MIDDLE value in a smallest to largest sequence of numbers
3. **Mode** = MOST common value

Let's look at the monthly incomes of a self-employed person over 14 months (in thousands of pounds) as an example of the above terms: **2 5 2 3 4 6 8 3 7 3 9 3 6 1**

Firstly, let's rearrange the data in ascending order:

1 2 2 3 3 3 3 4 5 6 6 7 8 9

$$\begin{aligned} \text{Mean (average)} &= \text{TOTAL/NUMBER} = \frac{\mathbf{1+2+2+3+3+3+3+4+5+6+6+7+8+9}}{\mathbf{14}} \\ &= \mathbf{62/14} = \mathbf{4.43} = \mathbf{\pounds 4\ 430 \text{ pounds average income per month}} \end{aligned}$$

Median is the MIDDLE value when the data is arranged in order of size. Where there are two middle numbers as here, then median is halfway between those two numbers. Thus:

1 2 2 3 3 3 3 4 5 6 6 7 8 9

Seven numbers

Seven numbers

So the Median = **3.5**

= \pounds 3\ 500 pounds/month

Finally, **Mode** = MOST common value. In the above sequence of monthly earnings, that figure is **3** (occurs four times in the sequence) = **\pounds 3\ 000 pounds/month**

There is a fourth term which is useful for gaining the broadest possible view of what may be happening. That is **RANGE**, which is the difference between the highest and the lowest values. Here: $9 - 1 = 8$ = **\pounds 8\ 000 pounds**

Generally, if the figures are presented in graph form, the mean is not in the middle of the range with almost everything else grouped closely around it and just a few values at the extreme high and low ends. Rather, the majority of values (wages, housing prices etc) are significantly less than the mean and only some values exceed the mean figure. The distribution is therefore a bump to the left in the graph and a tailing off line towards the right – a whale shape, if you like, with the head to the left.

Thus, in the UK national average salary is around \pounds 26\ 600 per year. Yet 50% of full time salaries in the UK are below \pounds 20\ 000 per year and around two thirds are less than \pounds 26\ 000. So the mean actually marks a dividing line between the wealthier 1/3 and the poorer 2/3. It is not the divider between two equal segments of the full time salaried population.

In this case the average, so beloved of politicians, trade union leaders, employers' organisations and journalists, is not where most people actually find themselves but is a far higher value and overstates the situation. In the above example, the mean or average exaggerates people's earnings.

I also have to sound a warning at this point about the notion of '**clumping**'. Whenever someone uses the phrase, "On average..." there is an automatic assumption that many – if not most - of the values are grouped tightly or clumped either side of the cited value. This is a totally subconscious impression, and the only sure response is to look hard at the data which provides that mean/average.

This may seem obvious but be aware that the 'clumping' assumption is quite a powerful psychological entity to challenge, and requires effort. It also requires clear communication in any meeting where others may be blissfully unaware of this significant assumption and its influence on their thinking. Only by bringing all the data into the open can this be countered with confidence.

If the mean can prove so misleading, what may help? The median value for the skewed graph is something of a downwards correction towards where the graph 'bulges'. It is not perfect but it is a very useful improvement and 'back of the envelope' type figure for business purposes.

5.2 Trends

Analysis of trends is important not just for understanding how a current situation has developed but also to anticipate near-future events and opportunities. Within this area, certain aspects are particularly important to critical thinking in the business environment, including **sampling period**, the '**recency effect**' and **isolating trends**.

Sampling period is an area of practical concern across business sectors: expert evidences and performance reviews; commercial and economic trends; seasonal patterns and demand cycles; client retention and new client acquisition databases. All require a strict and precise analysis which is not necessarily achieved because of the defined sampling period.

Let's look first at why the sampling period can prove crucial to the interpretation of a situation. A specialist car parts firm income is calculated as only 76 % of the long-term average for the period October to May. This is widely reported within the industry as the worst set of figures for at least five years. Obviously, this is heralding economic devastation and a storm of P45s at the company. Or is this just needless scaremongering?

Whenever someone declares, "These are the worst figures since....", we need to pose a key question. That question is: "Why sample the specific period quoted?" We need to look at the start and end points, clarify the rationale for the period being used for information or comparison. Crucially we should explore what may have been excluded and how much that changes conclusions or recommendations.

Back to our car parts firm then ... June rather than May is actually the most reasonable end point for a seasonal comparison because it is the last month when seasonal demand remains high for the specialist parts. If June is added on to the end of the specified period we create a realistic and meaningful period for analysis rather than an arbitrary one.

And surprise, surprise! When June is included, the picture changes and the headlines look decidedly overblown. Demand turns out to be 92% of the long-term average for that period. A shortfall of 8% rather than the much-hyped 24% is much less dramatic – and far less newsworthy. Or is that being too cynical?

And what is the vital information about June being a significant part of the pre-summer sales? We haven't been told that the specialist parts are pieces for the removable roof on convertible cars. Demand along the just-in-time supply chain increases in early summer as the peak sales period (with pre-orders) looms. And the dealers know that the family market increases during the July-August summer holidays whilst couples without children buy slightly earlier (June – July) to maximise the use of the new car.

Interestingly, then, the misleading trend period depended for its full effect upon context deficiency, an absence of key relevant facts. This brings out the strong caution that context deficiency may accompany selective trend periods in arguments and assertions.

How do you counter context deficiency when 'you don't know what you don't know' so cannot formulate a direct question? Ask time-based questions instead: "What happened

immediately before/after the period you mention?” or “If we added [x period before/after the time mentioned] how would the results differ – and why

As well as challenging the trend period, a second scrutiny is recommended: checking to see if there is a **‘recency’** effect. Imagine being told by a sales team during a presentation to you that, “Our business has grown X% over last five years”. The intention is to imply they are successful, know what they are doing, have appropriate products/quality - and should be the vehicle of your company’s success too. However, the five year period they quote could actually disguise excellent growth for three years followed by gradual decline in the most recent two. Although the end point may still be higher than the beginning you would want to know why the customer base is now shrinking – and ask if it is something that might adversely affect your own business?

The same caution needs to be exercised towards those who claim they or their products are the ‘fastest growing X in the last three years’. This could mean they have been world beaters consistently for each of the last three years – or they got exceptionally lucky in only one year. And if that one year is the first of the three.....

To counter the ‘recency effect’, nothing replaces thorough research and posing another awkward question: “Can you give me a breakdown of performance during the period you have just quoted?” You also have to consider how reliable is a trading source, supplier or outlet going to prove when they have already been significantly economical with the economic truth? In business and politics, history is consistently and ruthlessly salami-sliced into short periods which precisely support a marketing promotion, a particular ideology or cause of the week.

The third aspect is **‘isolating trends’**, whereby there are two (or more) related sets of figures which together give an overall result. However, only one or more of them may be provided for consideration and the other(s) are ignored.

As a quick example, let’s return to our specialist car parts firm. It supplies items for convertible models of the Chugg brand. The demand has increased by 1% (year on year rise) through official Chugg dealers. For a continuing weak economy and generally declining car sales, this is a good performance.

However, independent repair shops, dealers and collector clubs are showing a 9% year on year rise as recession-hit consumers look for cheaper outlets. With absolute figures, the full costs and profits can be evaluated but the newly growing market certainly needs investigation if the car parts firm is to adapt to harsher trading conditions.

Again, let's say that a declining economy correlates with an increase in crime – seems reasonable and easy for a proponent to declare as the basis of an immediate poverty-driven crime wave. However, this is not an even trend. Increasing metal thefts mean that recorded burglaries from factories and warehouses have risen by 3% year on year. Yet the same targeting means that burglaries from shops, offices and homes are down by 5% and with absolute figures which more than compensate for the rise in burglaries from industrial premises.

Do you need to spend more of your squeezed budget in a recession year on additional security measures against burglars? If you didn't know the various premises figures, the factories and warehouses burglary trend alone might give a misleading impression of an urgent general need. Again, nothing replaces thorough research but to get around context deficiency you can also ask the general question, "Are there any other figures which would go with these?"

5.3 Sampling and surveys

Excellent textbooks have been written on the subject of statistics for business application but the most pressing question is essentially: "Does the survey sample reflect my intended market?" Only an affirmative response to this question makes sampling results relevant to the identified need for certain information.

Before we go any further, it is useful to think a little about what sampling is and why it is employed. First of all, then, sampling is the selection of a set of individuals from within a defined population in order to gain knowledge or make predictions about the whole of that population. The criteria for definition may be geographical (postcodes or zip codes, political constituencies or historic counties, whole countries) or consist of specified characteristics (income ranges, consumer preferences, ages and so on).

Secondly, sampling is employed to reduce costs and, with limited numbers to address, to speed up the time taken both to gather data and ensure its quality and relevance. There can be something of a trade-off between accuracy and speed but there are systems of weighting data to overcome or at least minimise the effects of such a trade-off.

A key issue in reviews, evaluations, tenders and sales pitches is to ensure that the drawn sample is the same as the target population about which we actually want information. The key response is to spend some time and attention checking the precise characteristics and definitions to guarantee that information is suitable and strong enough for the next stages of project planning.

A summary check list can be drawn up for anyone in business receiving sampling-based reports or contributions which inform wider reviews. It does not assume a detailed knowledge of statistics but will nevertheless enable the user to gain valuable knowledge and assurances.

1. Sources:

- Identify the contact information list(s) which has/have been used (collectively sometimes known as a 'frame'. (This term is not to be confused with a critical thinking term - section 5.5 Framing). These can be of geographical locations or organisations or of databases from which information has been drawn for survey purposes.
- Check whether the data available has come from specific sampling methods or from lists which provide the required information directly e.g. the local authority's edited electoral register which can be purchased.
- As for sampling methods, advantages and disadvantages of directly used lists should be identified. The edited electoral register is updated annually but, in terms of target population sampling, it may be limited by the legal right of registered electors to withhold their details from it.

2. Sampling method:

- Confirm the actual method used.
- Seek a summary of strengths and weaknesses of that particular technique as they apply for your purposes (this should give you further information for making strategic decisions). Most methods have straightforward explanations which can also be found by internet search engine if a market researcher is not available or the report fails to include such discussion in the detail you require.
- Confirm sample sizes are valid for your needs.

3. Data collation:

- WOR (WithOut Replacement) – check that the method systematically rules out counting the same thing or person twice during one sampling (for example repeat cold calling at single occupant home addresses)
- Confirm the method design has not been breached or, if so, adjustment has been made (eg striking out certain entries) and implications fully followed up
- Check the presence/degree of bias introduced by non-responses. There may be gaps in the information through collection failures. Ask what this means for conclusions and recommendations if weighting methods to compensate have not been used.
- Any other influential factors and context worth knowing about?

Internet sampling/polls risk a number of complications which can make them less useful as ready reference sources of information. Firstly, significant potential exists for confusion either through WOR (a single person using multiple e-mail addresses) or non-response (participants may not use some e-mail addresses or open messages only infrequently). There is no easy way of telling which problem dominates a results return.

Secondly, non-response rates may also vary with the offer of incentives, their online uptake and indeed, perception in the minds of potential participants about the appropriateness or desirability of the incentive associated with the survey.

Thirdly, internet polls can draw attention from participants with particularly strong motivations or spare time/opportunity so there is inclusion bias; other relevant fundamental biases, such as gender or race, could be evident based on local factors. Fourthly, a polling website or organisation may be using less than neutral wording for questionnaires (see below). Fifthly, despite the ever-increasing use of the internet, significant groups may be excluded from such a means of contact.

In all of this discussion, the sampling match grid (chapter 4) is a highly relevant tool for assessing the relevance of what is being put forward. On-line research using reputable websites and articles may provide additional information about internet surveys in areas of market interest.

5.4 Information visualisation (IV):

“The error of our eye directs our mind: What error leads must err.” **William Shakespeare**

Despite the continuing dominance of the PowerPoint bullet point in business communications, IV has very quickly raised its profile. The key phrase is ‘information overload’. The internet provides a literally infinite amount of data and portals for research and advice, all shared instantly and extensively with no more than a couple of clicks of the touchpad.

I read somewhere recently that the internet produces as much information every 48 hours as was generated in the entire history of mankind up until around 2002. Such avalanches of incoming data and sources have to be made manageable for the rather more limited human brain and IV is proposed as an important tool for such a task, turning spread sheet data and commonly occurring words/themes into pictorial representations. The strong visual results are as much artistic as they are managerial, and capture both the eye and the attention by their novelty, patterns and colour.

An IV document undoubtedly has advantages which tempt the executive: the context or overview of the information is instant and has the same immediacy as a communication tool to various levels of management or clients. An IV presentation may be especially helpful to the majority of people who learn by seeing (as any teaching or presentations training textbook points out) and bypasses the problems of text dyslexia. IV methodology expresses

complicated comparisons as well as communicates very large quantities of information. It assists hugely in identifying patterns that might otherwise remain unnoticed.

These are formidable points in favour of IV with the danger that it is relied upon to an unwarranted degree as there are still some major disadvantages. Firstly, an IV picture may seem to be straightforward communication but learning theory recognises that people have different ways of understanding knowledge. Those who internalise information best through text and cognitive argument, those who learn and retain through hearing, those with the various combinations of colour blindness and those with processing difficulties for patterns are not going to receive the fullest, clearest communication that an IV-enthusiastic manager thinks they may be sharing by this methodology. The legal framework for disabilities equality could mean that IV may have to be set aside in some of the listed circumstances.

Secondly, in strict terms of critical thinking there is also the risk of decision-making being based on over-processed data. There may be issues of defining groups and batching (section 5.5) prior to formulating the IV image. An IV document is a step removed from the raw figures and options which can be re-checked immediately so it may be difficult to spot omissions. And there may be assumptions of equal value being given to all items or data values when some may be more dubious than others for reasons undisclosed by the IV itself.

It is always important then, to still have the raw data conveniently to hand when being confronted by an IV image. It is possible, for example, to query which rows of spread sheet information have been categorised under which bubbles or words; in short, the general approach of not just accepting the final question and figure for a survey applies also to IV. Only when the background points have been verified can an IV be used as a summary.

5.5 Framing

Now, for a change of gear, think hard about the following question: “When was the last time you came across a charity-sponsored survey which demonstrated there was no longer any problem for that organisation to solve?”

Welcome to the dark art of 'framing', the business equivalent of 'leading the witness' in courtroom dramas. Indeed, 'framing' works on the barrister's principle that you never ask a question to which you do not already know the answer.

Let's consider a little further the charity example above to gain understanding of framing as a persuasion tactic. After all, UK charities at the time of writing receive around £6 billion/year, making them a very large service sector industry. And that is exactly how they approach potential donors.

Broadly speaking, 'framing' surveys adopt one of two approaches: factual ignorance or emotional appeal. Sometimes there can be a mix of the two but one of these strands is usually dominant.

Have you ever noticed how common it is for voluntary sector organisations to start their scripted public interview sessions or questionnaires with phrases like "Are you aware that..." or "Did you know that..." These key phrases should immediately alert the participant to the 'factual ignorance' tactic of being told pre-selected information for a purpose. That purpose is usually to make your agreement with their view in the final question almost inevitable. Such questions can be irritating but can also make any reasonable person feel guilty, ignorant or plain stupid. I would argue that they are used as a form of intellectual pressure on participants to concede the argument, to accept the view that is being put forward *and* to internalise it through the vehicle of painful ignorance.

Concerning the 'emotional appeal' style of presentation, here is a typical sequence of questions on charity 'survey' forms that drop through the letterbox:

Q1 Do you think there are too many unwanted pets/neglected children/families without clean water today? OR do you think there are more unwanted pets/neglected children/families without clean water than 10 years ago?

Q2 Does this [insert issue fact from Q1] concern you?

Q3 Do you believe that unwanted animals should just be destroyed even if they are perfectly healthy/children should miss out on education and a future simply because they had the ill-luck to be born into poverty?

Q4 Do you agree more money should be spent on [insert issue] as a matter of priority?

Q5 Charity XYZ receives no government funding for its vital work. Would you be prepared to donate £3 a month to make this service possible?

How could anyone say 'no' to question 9 if they have already said 'yes' to the previous questions? Question 1 is an opinion. There may be deteriorating circumstances but, as crime surveys consistently show, people still believe things were better some years ago even when there are improvements.

Note how question 2 now turns a 'yes' answer to the previous question into a declared personal - internalised - value. And who would not say 'yes' to question 2? Or feel guilty and in a minority if they truthfully answered 'no'? Question 3 continues to internalise with 'do you believe' – stronger even than 'Do you think'. The question uses emotionally emphatic language.

A more neutral approach would be to quote known figures without editorialising (section 4.4) – and set the number at issue in terms of numbers total animals rehomed and /or in the country, children affected within locally and as a national demographic , and so on. Likewise the use of the words 'just', 'perfectly', 'a future' and 'ill-luck' are examples of editorialising. In Q8 there is the 'lean' – an additional pressure of: 'The government does not fund us – only you (who have said' yes' so far) can help us'.

Such questionnaires are designed to generate an immediate attitude of injustice which borders on outrage and further lessens any resistance to following up a suggested specific action. Again, this directed action is a basic sales tactic recognisable by any business person reading this book. "Sign up to this petition or monthly direct debit if you feel like this", is the closure message – with forms attached to the mailing. For charities this is a very effective way of building guaranteed cash flow quickly, and expanding databases of persons known to be interested and likely to respond positively.

The defence against such carefully constructed questionnaires having their desired effect is the '**Jury Standard**': ask yourself if the average person on the bus/tube train would really know this or that fact from their daily experience?

If you believe that I have been too cynical in describing the potential effects of framing, then I would like to give you a small research project to follow up in your own time. I do guarantee, however, that this will be the most enjoyable personal development exercise proposed by a business book in years.

Purchase the BBC Yes, Prime Minister Series 1 and pay close attention to 'The Ministerial Broadcast' episode. Here senior civil servant Sir Humphrey Appleby gives junior Bernard a lesson in how to frame survey questions two different ways to get complete completely opposite results. Then take a couple of minutes to compare what is said in the programme script with the questions on the charity 'surveys' that come through your own letterbox.

That wonderful BBC script includes another significant point as a throwaway remark – that only the final question of such a survey is published; all the preceding ones are never mentioned again. The final question is usually presented as a statement of the formula:

85% of the public want/need/support whatever X organisation is doing/demanding

You need to obtain the full survey questionnaire and check for all leading questions which would warp the final results; this precaution is discussed further below.

Particularly with the 'emotional appeal' type surveys, it may well be worth asking what else was distributed alongside the questionnaires in mailings, shown to consumers in High Street promotions or included in the text content/attachments of e-mail circulars. There may be close-ups of faces with big eyes - household pets or young rags-draped children - and cover letters with large type headlines challenging the reader: 'Do you think unwanted animals should be put to sleep/children should sleep on the pavements/have to drink muddy water?' Surely, this is 'framing' even before the responder reads the first question.

And why is this worth mentioning? Because the same presentation principles apply equally to business marketing practices and we can always learn from others. Secondly, this brings us to a more detailed consideration of framing in business.

Many business people read and use information that is published in the mass media as background information for understanding their communities and identifying their markets, innovative opportunities and products. A proportion of that information is produced exactly

as described above by organisations which have a vested interest in their services being publicised. Indeed, a primary function of a survey being promoted via press release campaign is specifically to raise profile and make the organisation look like a leading body in that sector. Businesses and individual entrepreneurs use the same tactic with the same agenda, attempting to position themselves as 'corporate celebrity experts'.

General background reading and knowledge picked up via TV, radio, internet or newspapers may be of less value for essential decision-making than might appear at first sight. Again, caution is required.

Any statistics from questionnaires and surveys should be queried by asking, "What is the likely agenda of the commissioning organisation?" and visiting their on-line profiles and web-pages, exactly the same sort of research that every business undertakes when trying to identify prospective clients or partners.

As a minimum practical step, the discerning director or other decision-maker should obtain a full set of the questions contained within the survey. Look for 'leading the witness' phrases such as those given earlier or for anything else that could be suspected of introducing a degree of bias. If there are such signs it is best to just set aside the 'findings' and consider means of identifying alternative reputable sources.

Within the workplace or training environment, it is possible to introduce 'framing' and its guiding effects through a series of discussion questions or statements. A common failure which leads to effective and negative framing is that of '**leader bias**' or '**leader reinforcement**'. A leader can highlight an actual situation being faced by a project team/working group or provide an exercise scenario. They then ask for key ideas, thoughts, feelings and impressions, summary words or skill sets needed.

This approach may seem open and transparent but can prove to be far from neutral and limit the options to be explored. The leader reacts with positive warm tone and open body language (section 9) when whatever they prefer as a 'preferred' or 'correct' answer is given by one of the attendees. The next run of contributions which follows will imitate the first perceived 'right' answer. The leader's tone and body language can also subtly signal disapproval if a 'wrong' answer is mentioned. Thus a group is both encouraged and

deterred simultaneously in order to play a mental version of follow the leader. The final result? A meeting has restricted problem-solving capacity, options are fewer and weaker than might be the case and creativity is stifled.

Support for a project, or resistance to it, can come across as unarguably strong in other ways too, meaning that review is not carried out as thoroughly as it should have been. Assumptions are particularly masked when the project proposal or refusal is accompanied by bland **cover statements** like 'I spoke to Bob and he agreed with this as you can see by his signature'. Such summary sentences miss out an entire indoctrination process – quite possibly unconscious as outlined above - which went on between saying 'Hello' to Bob and his final decision to put pen to paper or left-click his mouse.

Survey figures, it should be noted before we move on, are associated with other areas of concern to critical thinkers. A businessperson may not be looking at results coming from a surveyed general population which resemble their target market and sub-market profiles when s/he really looks in depth at the niche characteristics. (This takes us into the complex world of sampling methodologies which are beyond the remit of this handbook.) There is also the issue of establishing baselines of knowledge and training – giving the facts to people who wouldn't otherwise be aware of what is usual, acceptable or exceptional.

5.6 Batching

This is a very common presentational trick in politics and the media – deliberately grouping together separate categories in order to produce one headline figure which looks impressive. The size of the figure 'demands' a response in line with the actions, priorities and preferences of the presenter. As an example

Proposal to ban X	Absolute number	Percentage
Strongly against ban	250	25
Unsure	300	30
Strongly in favour of ban	450	45

In the above situation, there is a well-publicised proposal to ban X. Someone campaigning against the ban might batch together the 'strongly against' + 'unsure' totals. $250 + 300 = 550$. Any headline figure is usually given as a percentage only (chapter 4) so the campaigner's lead line will say: "55% do not favour ban". If the percentage is not used immediately the headline will be: "Majority unconvinced by ban proposal".

Someone campaigning in favour of the ban can use the same figures to argue their case. They will batch together the 'Strongly in favour' + 'unsure' totals. $450 + 300 = 750$. The headline becomes: "Only 25% against ban" or "75% do not oppose ban". The word version would be "Majority do not oppose ban" or "Majority could accept ban". One set of figures, two combinations and two sets of spin in opposite directions.

A subtle form of batching can be expressed through grouping titles or definitions. Let's say that an organisation produces an internal report with the headline finding that 10% its personnel have faced disciplinary action during the last operational year. However, the definition of disciplinary action actually covers a wide spectrum of misdemeanours: punctuality, personal use of e-mail or internet browsing, loss of memory sticks with unsecured data, anger management concerns assault, What does the picture look like if only 1/20 of that 10% have involved assault or anger management problems and that the vast majority are punctuality or e-mail/internet browsing time issues?

You also have to ask what is being measured when figures are put before you. Is it an opinion rather than a measured fact? This is the prime territory of the hair and beauty products marketing companies. The survey result is expressed as '92% of women say they can see a difference.' This is not a direct, data-founded measure of change but an expression of a subjectively perceived difference.

Often these widespread opinion or product surveys combine subjectivity with small sampling numbers. Those numbers appear in the small print which runs along the bottom of the screen or at the bottom of the advert. The much larger headline attracts the attention first and thereby creates a primacy effect of accepting the message. The correction only comes after a strong impression has been made – the equivalent of burying information deep down in paragraphs following survey summary statements and headlines.

Much of the defence rests upon recognising the format or wording of the summary statement, as indicated in the discussion above. It is essential to see the raw data in order to confirm percentages and absolute values, and validity (or risibility) of the sample size.

Batching matters because it can adversely influence business planning. Yet again, examples and figures drawn from background reading/ public domain for planning purposes may prove to be well-worked examples of batching. Undetected, batching creates a strongly misleading impression of a much larger potential support or target market than really exists.

5.7 Ratio Bias

Ratio is a useful summary statistic for businesses but, in assessing an overall situation, we should be aware of a key psychological weakness relating to the presentation of ratio information. The weakness is 'ratio bias': essentially, the bigger the numbers quoted, the greater the significance we attach to it – even if the actual ratio is still the same.

To illustrate, let's say that one research report indicates that 6 units out of 200 of aerosol brand A are defective. Another report finds that 750 units out of 50 000 of aerosol brand B fail to work. Despite the first being 3/100 and the second being 1.5/100, many readers will subconsciously think that B is the less reliable product. This is ratio bias at work.

The existence of ratio bias is a boon to the media for playing up risks – larger numbers are perceived as more dramatic examples to consumers and campaigners. This also means a risk of headlining (section 7.1) and a need for great caution in using reports from the public domain for evidence-gathering in market research or selection.

Of great interest to the commercial environment, the same effect works with the breakdown of figures into time units. A defect product rate of 10 units/day, for example, can seem more manageable than 3650/year although the two are equivalent – and it can be tempting to understate failure rates and trends in this way. The remedy is to standardise all such figures according to operational periods such as VAT quarters or financial year.

It is also true that in meetings, confronted with similar ratios but larger numbers, great significance may be attached to the larger number as described above. As ratio bias is a commonly shared perceptive weakness, then it is likely that everyone present will react in

the same way. Even this is only an initial impression it will be harder to overcome than you might expect because of the primacy effect in presentations. In all cases, the remedy is to mention that, "The larger absolute figure might give a strong but wrong impression because in fact the ratios are similar." Next, apply the same units to all ratios involved eg X/1000 or X/year, and show your calculations which lead to the values per unit quantity or time. Only at this point should the preferred choice be introduced.

5.8 The 'compromise'

In strategic review and forward planning meetings of all kinds there are two common variants when it comes to compromise in making final decisions. Both are significantly flawed, and to be avoided. I call them the **true compromise** and the **false compromise**.

The **true compromise** is a genuine and understandably human, if profoundly misplaced, approach: the recommendation to adopt a position or plan which falls midway between several options.

This deficient formula – or a strong element of it, at least - most often appears in group task settings. It is especially likely to show itself towards the end of long, highly detailed meetings when everyone is hot and tired, perhaps frustrated and their usual concentration is failing. A true compromise can also be the outcome of an ill-paced or packed agenda when people are rushing through the later items to beat the clock.

The driving factor to leave the room with a decision at all costs may be a strong fear that there will be difficulties in adhering to project deadlines if there is no conclusion on the day. There may be concern that those excellent ideas which have surfaced so far in the meeting risk being progressively discarded by further meetings. Or that those valuable contributions may come to nothing as enthusiasm and team engagement wane after this one 'big push'.

In such circumstances, the critically thinking attendee may need to encourage participants to get the matter settled with determined thought and paced discussion – but also be prepared to support a second, focused meeting to ensure highest quality decision-making. Across the world, the open plains of business are littered with the bleached bones of failed project planning.

Decision-making time can be reduced by quickly moving to manage participants' expectations; this enables renewed critical thinking to take place. Two points need emphasising:

- A compromise involving anything and everything on the table does not automatically create an effective solution
- Attendees have to be prepared to accept that the 'best outcome' may actually be one out of all the choices (no matter how polarised) or something very close to it

Then the group can move on to identify systematically the pros and cons of the options with evidence-based reasoning to make the decisive selection and structure a plan.

Working methodically in this way makes it clear that there is no favouritism should the concluding assessment or plan come close to one particular option. Or if, after everything I've just said, the final plan does stand equidistant from all the initial options it is also clear that this is not because of time pressures alone. It can be put into action by the participants with confidence.

A last note on true compromise: the basic management principle that people will act most vigorously when they understand just how a position has been reached applies doubly here. Even if time runs out and review has to continue on another occasion despite hideously tight deadlines to get to that position, the enduring quality of team engagement during the project will be worth the effort.

The second variant, **false compromise**, is the result of subtle 'railroading' tactics, used by someone who may be pushing a strong personal agenda or career ambition. The proponent will listen to all other views and note key points and evidence suitable for their particular use. They can then present their own proposal as being a 'reasonable compromise' between all other offered choices.

As social animals, this is a most attractive and pleasantly agreeable option to adopt. It just may not be the right one for the aims and objectives of the company and the project under consideration.

Here, the critical thinker has to respond while facing the disadvantage that the proponent has gained significant goodwill in the meeting room. The reply therefore has to be an acknowledgement that the proposal may be a 'reasonable compromise' but that it is not the same as a fully 'reasoned' compromise.

You need to demonstrate that, firstly, the reasons cited by the proponent plus *all* the evidence from other attendees' options can create a contrasting alternative; secondly, that the consequences of the alternative far more closely match the defined aims and objectives of the meeting.

Note that, by this particular approach, you also turn the proponent's broader tactic of generating goodwill against them by highlighting the individual contributions of others around the table towards your final rational offering.

Whether 'true' or 'false', compromise really means 'compromised', and the final dossier might just as well have 'Doomed to Fail' stamped in big red letters across the front cover.