

WHAT'S THE PROBLEM?

RISK PERCEPTION AND DENIAL



Climate change is intangible you can't touch, hear or feel it; although some of its effects are playing out right now, it is mostly described as being something that will happen in the future; its impact will be global and many say disastrous; while most experts say that it is caused by human activities, a vocal minority disagree and other people declare it isn't happening at all; and no-one can predict exactly how it will affect you, me and our families.

The human mind has evolved to prioritise the present over the future; to worry about the known over the unknown; uncertainty puts us off; we can be unrealistically optimistic; and if something is too hard to take we are quick to slip into denial.

Is it any wonder that people don't seem to be taking the risks of climate change seriously?

DISCOUNTING THE FUTURE

Evolutionary theory suggests that the long arm of selection would have favoured beings that valued immediacy over those who preferred to wait. Hunter gatherers had to collect resources and reproduce quickly before they died. Those who put off the opportunity to eat, might come back and find their food had been stolen, or they might have been eaten themselves in the meantime. So, people lived in the present.

And the trait continues today. We place greater emphasis on costs or benefits in the near future or from the recent past. We find it hard to give the same level of reality to events that have yet to take place as we do to those near to the present. Thus a small reward now will normally be taken in preference to a much larger one later on.

This obviously has implications for climate change policy. Climate change is not seen as a tangible threat, as it is perceived that the negative effects won't be felt for a long time.

Worryingly, in a study carried out in Canada, by evolutionary psychologists, Margo Wilson and Martin Daly,¹ it was shown that men discounted the future more after considering the appeal of pictures of pretty women. This did not happen to men who were shown pictures of less attractive women! Should we learn something from this?

¹ <http://nerosciencemarketing.com/blog/articles/pretty-women-impatient.htm>

AVAILABILITY AND PROXIMITY

The availability concept is a mental shortcut that involves basing judgements on information and examples that immediately spring to mind.

The term was coined in 1973, by psychologists Amos Tversky and Daniel Kahneman who proposed that people may use an availability heuristic to judge the frequency and probability of events. This heuristic is based on the idea that when asked to decide whether something is likely to happen, and its frequency, we base our judgement on how easy it is to think of relevant examples, or on how readily we can imagine the outcome. Thus, vivid and easily imagined causes of death, for example, tornadoes, often receive inflated estimates of probability, and less-vivid causes such as asthma attacks receive low estimates, even if they occur with a far greater frequency. So too, recent events have a greater impact on our behaviour, and on our fears, than earlier ones.

“If you can think of it, it must be important”

And people are more likely to take a potential problem seriously if they have already experienced its negative effects. For instance, if you have personally experienced a serious earthquake you’re more likely to believe that an earthquake is likely than if you only read about it in a magazine.

It appears that people’s thinking can also follow a proximity (or closeness) heuristic; that is, a tendency to judge probabilities by monitoring the spatial, temporal, or conceptual distance to a target. If a person trips and falls, there’s a good chance it was caused by something at his or her feet. We keep children at a distance from bonfires, fireworks, traffic, cliffs, and the water’s edge because proximity to risk sources is held to be dangerous, whereas distance is believed to offer protection and safety.

Barry Schwartz² cites a study which asked respondents to estimate the number of deaths per year that occur as a result of forty different misfortunes - various diseases, car accidents, natural disasters, electrocutions and homicides. The researchers then compared people’s answers to the actual death rates. The respondents judged accidents of all types to cause as many deaths as diseases of all types, when, in fact, disease causes sixteen times more deaths than accidents. Death by homicide was thought to be as frequent as death from stroke, when in fact, eleven times more people die of strokes than from homicides. In general, dramatic, vivid causes of death were overestimated whereas more mundane causes were underestimated.

The authors of the study then looked at two newspapers, published on opposite sides of the USA and they counted the number of stories involving various causes of death. The frequency of newspaper coverage and the respondents’ estimates of the frequency of death were almost perfectly linked. People mistook the existence of newspaper stories about homicides, accidents, or fires, vivid and easily available to memory, as a sign of the frequency of the events these stories told, whereby dramatically miscalculating the various risks we face in life.

Dan Gardner³ poses another example – our reaction to radon. Radon is a naturally occurring radioactive gas that can cause lung cancer if it pools indoors at high concentrations, which it does in regions scientists can identify with a fair degree of precision. It kills an estimated forty one thousand people a year between the US and the EU. Public health agencies routinely run awareness campaigns about the danger but journalists and environmentalists have seldom shown much interest, and the public has only a vague notion of what the stuff actually is.

² *How we assess Risk by P Slovic, B Fischhoff & S Lichtensteing*; Barry Schwartz (2004); *The Paradox of Choice*; p. 59/60

³ *Dan Gardner (2009) Risk*; p. 81

In Ireland, a 2005 report from the Radiological Protection Institute estimated that radon alone causes approximately 13% of all lung cancers, which averages out at one hundred and ninety five deaths annually. The 1997 Building Regulations specify that all new houses built since July 1998 must be fitted with an inactive radon sump and those built in High Radon areas must also install a radon barrier. But this is not a complete guarantee that the dwelling is radon free, so it is advised that all householders have a radon test. How many of us have done this?

UNCERTAINTY ABOUT THE FUTURE

People are generally averse to uncertainty.

They are, therefore, reluctant to take action in response to information that smacks of vagueness.

The effect of uncertainty on individual behaviour is thought to be driven by a range of processes.⁴

- Statements of certainty are easier to understand and respond to than statements of uncertainty
- Uncertainty about negative futures can allow people to maintain a relatively optimistic stance about current behaviour and may provide a convenient justification for self-interested actions - *"if I don't know what will happen in the future, why should I take action now?"*
- Uncertainty about the future can threaten individual needs for predictability and control
- People do not want to take the risk that their action, based on how they see the future, may prove to be inadequate, or a mistake - *"best to do nothing, let's wait and see what happens"*.

Interestingly, John Maynard Keynes thought of uncertainty as being a very dominant impulse in human behavior. When the future is uncertain, he believed that a lot of saving would be directed towards gaining security in the present, rather than building wealth in the future. Classical economic theory would suggest that people save so that they can invest for the future. Keynes thought of saving more in terms of hoarding, and he felt the propensity to hoard would normally be stronger than the inducement to invest.⁵

UNREALISTIC OPTIMISM

Unrealistic optimism is a form of defensive response whereby people think that good things are more likely to happen to them than to their peers, and that bad things are less likely to happen to them than to others. It characterises most people in most social categories.

When we overestimate our personal immunity from harm, we fail to take sensible preventive steps. Apparently, we are unrealistically optimistic about things even when the stakes are high.

In an experiment to test the theory, health psychologist Neil Weinstein (1983, 1984) asked subjects to examine a list of health problems and to state, compared to other people of their sex and age group, what they thought were their chances of contracting the illness. The results of the study showed that most subjects believed that they were less likely to succumb.⁶

⁴ <http://centres.exeter.ac.uk/cee/prometheus/Morton,Rabinovich,Marshall,Bretshneider.pdf>

⁵ Neil Weinstein (1983, 1984)

⁶ http://scholar.google.com/citations?view_op=view_citation&hl=en&user=UnUY1OcAAAAJ&citation_for_view=UnUY1OAAAAJ:dgkVwhDp10C

Weinstein described four cognitive factors that contribute to unrealistic optimism

- lack of personal experience with the problem
- the belief that the problem is preventable by individual action
- the belief that if the problem has not yet appeared, it will not appear in the future
- the belief that the problem is infrequent.

Weinstein argued that individuals show selective focus. We ignore our own risk-increasing behaviour, focusing primarily on our risk-reducing conduct. And we're egocentric, and so ignore the risk-reducing activities of others.

In the US, about 50% of marriages end in divorce, which is a statistic most people have heard. But around the time of the ceremony, almost all couples believe that there is approximately a zero percent chance that their marriage will end in divorce - even those who have already been divorced before!

A similar reaction applies to entrepreneurs starting new businesses, where the failure rate is at least 50%. In one survey of people starting new enterprises, typically small companies such as contracting firms, restaurants, and salons, respondents were asked two questions:

- (a) What do you think is the chance of success for a typical business like yours?
- (b) What is your chance of success?

The most common answers to these questions were 50% and 90%, respectively, and many said 100% to the second question.⁷

DENIAL

Denial is a defence mechanism which is used when a person is faced with a fact that is too uncomfortable to accept and so they reject it, insisting that it is not true, despite what may be overwhelming evidence to the contrary. It is an unconscious defence mechanism for coping with the fear, guilt, anxiety, shame, disappointment, and other strong emotions aroused by reality.

Denial is embedded in everyday life - think of all the common expressions and phrases we use: *turning a blind eye; burying your head in the sand; ignorance is bliss; living a lie; conspiracy of silence; economical with the truth; averting your gaze; ask no questions and you'll be told no lies; she looked the other way; don't wash your dirty linen in public; it didn't happen on my watch.*

Stanley Cohen⁸ talks about three types of denial:

1 Literal, factual, blatant denial - the fact or knowledge of the fact is denied

2 Interpretative denial - the raw facts are given a different meaning from what seems apparent to others; *population exchange not ethnic cleansing; oral sex is inappropriate behaviour not a sex act.*

3 Implicatory denial - there is no attempt to deny either the facts or their conventional interpretation. Instead, the psychological, political or moral implications that conventionally follow are denied; *It's got nothing to do with me; I don't care; not my problem; doesn't bother me.*

Denial can involve:

- Cognition - not acknowledging the facts
- Emotion - not feeling, not being disturbed
- Morality - not recognising wrongness or responsibility
- Action - not taking active steps in response to knowledge

⁷ Richard Thaler & Cass Sunstein (2008); *Nudge*; p. 32

⁸ Stanley Cohen (2001); *States of Denial*; p. 7-9

Denial can be individual, personal, psychological and private, or shared, social, collective and organised.

It is not a stable psychological condition. Unless psychotically cut off from reality, no-one is a total denier or non-denier, or either “in denial” or “out of denial” permanently. People give different accounts to themselves and others and elements of partial denial and partial acknowledgement are always present – depending on the circumstances, denial and acceptance can flicker on and off like a light bulb.

So let’s face it, we’re all in denial about something.

We usually think of denial as being a negative response to a situation. But, denial is not always bad. At times, it is almost essential for normal functioning – some switching off is necessary to get through the day. And we have to have a way of dealing with a constant torrent of bad news stories, and information overload.

For my part, the fact that, after reading all these books about the shocking implications of climate change, I can still trot around as if nothing was wrong, must mean that I am definitely in denial of.....climate change.

Denial can sometimes aid recovery as shown in a series of studies carried out in London on women diagnosed with early stage breast cancer. Those who faced their situation with a fighting spirit, and optimism, and those who effectively denied their cancer, refusing to discuss the subject and showing no emotional distress fared much better than those who stoically accepted their fate, or those who felt overwhelmed, hopeless, and defeated. In a follow-up study fifteen years later, 45% of the women from the first two groups were alive as opposed to 12% of the third group.⁹

COGNITIVE DISSONANCE

In 1957, Stanford psychologist, Leon Festinger developed the theory of cognitive dissonance, which is closely connected to the theory of denial. Cognitive dissonance describes the tension between what we think and what we do. Festinger believed that humans have an inner drive to hold all our attitudes and beliefs in harmony and to avoid disharmony, or dissonance.

The social psychologist Carol Tavis,¹⁰ says that cognitive dissonance occurs whenever a person holds two cognitions - ideas, attitudes, beliefs, or opinions - that are psychologically inconsistent, such as “*smoking is a dumb thing to do because it could kill me*” and “*I smoke two packs a day*”. Dissonance produces mental discomfort, ranging from minor pangs to deep anguish, so people don’t rest easy until they find a way of reducing it. The most direct way for a smoker to reduce dissonance is by quitting. But, if she has tried to quit and failed, now she must reduce dissonance by convincing herself that smoking isn’t really so harmful, or that smoking is worth the risk because it helps her relax, or prevents her from gaining weight.

Most behaviourists were convinced that people’s actions were determined by reward and punishment. You don’t stay in a boring job without pay, and you won’t cross the road if there is a car coming.

But because humans have the ability to think, dissonance theory demonstrates that our behaviour transcends the effects of rewards and punishments and often contradicts them.

For instance, if you go through a great deal of pain, discomfort, effort or embarrassment to get something, you will be happier with it than if it came to you more easily. So, if we gave up a family holiday and disappointed the kids, in order to buy a shining new SUV, and oil prices continued to rise, I’ll still defend my choice of vehicle, finding all sorts of ways to justify why I bought it - *it’s safer, more comfortable and reliable*. The cognition that I am a sensible, competent person is dissonant with the cognition that I went through a painful procedure to achieve something that may in the long run turn out to be disastrous for the family finances. I will only speak highly of the benefits, ignoring the downside.

⁹ Stanley Cohen (2001); *States of Denial*; p. 55

¹⁰ Carol Tavis (2008); *Mistakes Were Made (but not by me)*; p.13

Dissonance theory also exploded the self-flattering idea that we humans process information logically. On the contrary, if the new information is consonant with our beliefs, we think it is well founded and useful “*just what I always said*”, but if the new information is dissonant, then we consider it biased or foolish “*what a dumb argument*”. So powerful is the need for consonance that when people are forced to look at disconfirming evidence, they will find a way to criticise, distort, or dismiss it so that they can maintain or even strengthen their existing belief. This mental contortion is also called the confirmation bias. Reading information that goes against your point of view can make you all the more convinced that you are right; you find in it all sorts of minor flaws, which you then magnify into major reasons why you should not be convinced by it. And the confirmation bias even ensures that the absence of evidence is also evidence which proves your case - *the fact that I can't prove he took the sweets, just shows how devious he is!*

Neuroscientists have shown that these biases in thinking are built into the very way the brain processes information. The reasoning areas of the brain virtually shuts down when participants were confronted with dissonant information, and the emotion circuits of the brain light up happily when consonance is restored.

CULTURAL DENIAL

Stanley Cohen¹¹ acknowledges that whole societies can slip into collective modes of denial. Without being told what to think, or being punished for knowing the wrong things, societies arrive at unwritten agreements about what can be publicly remembered and acknowledged. This is often reflected in mass media coverage of the issue.

An entire language of denial can be constructed in order to avoid thinking about the unthinkable.

Such macro-denial at the societal level occurred in Ireland around the sexual abuse of children by members of the Catholic clergy. People couldn't acknowledge it was happening because of the belief that the church could do no wrong, the important position it held in Irish society, and because of a fear of challenging the papal authority. Despite some children's complaints, they were not believed and the wall of silence remained. Little was done until, gradually, victims began to speak out publically, and they were supported by self-help groups and professionals.

And it is happening again with climate change.

US sociologist Kari Marie Norgaard¹² spent part of 2000 and 2001 living in a rural community in western Norway, interviewing the local people and drawing on ethnographic data in an effort to try and understand why, when climate change is the most significant environmental issue of our time, so few Western nations are taking action.

The unusually warm autumn and winter of 2000 had brought severe flooding across the region. And by January, the winter had been listed as the second warmest in the past one hundred and thirty years. As a result, the local ski area did not open until late December, and only then with the aid of 100% artificial snow – an unprecedented event with dramatic effects on everyday recreation activities, such as skiing, skating, ice fishing, and on the local economy.

In Norway at the time, there was widespread public support for the environmental movement, as well as public awareness and belief in the phenomenon of climate change. While the unusual weather was widely linked to global warming by both the media and members of the public, and despite the clear social and economic impacts on the community, Norgaard was struck by how no social action was taken by the people to cut back on their greenhouse emissions. They were clearly aware of the problem and its impacts, and they were directly experiencing unusually warm winter temperatures and very low snowfall,

¹¹ Stanley Cohen (2001); *States of Denial*; p.10/11

¹² Kari Marie Norgaard (2011): *Living in Denial - Climate Change, Emotions and Everyday Life*

yet they carried on about their business as if it didn't exist. Residents didn't write letters to their local newspaper, they didn't pressure their politicians, or cut down on their use of fossil fuels. Global warming did not appear to be a common topic of either political or private conversation, unless Norgaard brought it up, which often killed a good conversation. She found that, for the highly educated and politically savvy residents of the area, climate change was common knowledge, unimaginable, and unmentionable.

Kari Norgaard attributes this lack of response to the phenomenon of socially organised denial, by which information about climate science is known in the abstract but disconnected from political, social and private life, and she sees this as emblematic of how citizens of industrialised countries are also responding - you know, but you don't want to know - we live in one way and we think in another.

She says the residents are conflicted by personal feelings of concern, powerlessness, and guilt, and the larger cultural norms of the society which expect emotional toughness and control. There is also conflict between the country's national image as being rugged, nature loving, environmentally aware and humanitarian, and the fact that Norway ranks third amongst the world's largest oil exporters, and is the world's second biggest gas exporter. Today, there are fifty one active oil and gas fields on the Norwegian continental shelf, and even after thirty five years of production the Norwegian Petroleum Directorate believes that Ekofisk still has the largest reserves. In total, nearly 40% of the discovered marketable oil resources on the Norwegian shelf have not yet been extracted. In addition, there are probably many undiscovered fields. Oil and gas comprise 47% of the total Norwegian export market. As of 2008, the oil and gas industry accounted for 26.6% of the Norwegian carbon dioxide emissions. Under the Kyoto Protocol, Norway promised to limit its greenhouse emissions to a maximum of 1% above 1990 levels. However, at the time of Norgaard's research in 2001, total carbon dioxide emissions had increased by 20% from 1990 levels.¹³

Norgaard concludes that, for Norwegians, thinking about climate change is difficult because it raises troubling feelings that go against a series of cultural norms. And these norms are in turn embedded in the particular social context and economic circumstances in which people live.

A nation's willingness to contribute to reductions in greenhouse gas emissions is inversely related to both their own emissions and national wealth. Rather than the public failing to act because of a lack of information, they are actively resisting on a collective level to respond to the available information, and to integrate the knowledge into everyday life or to transform it into social action. This is cognitive dissonance in action – being a good person in this part of Norway means contributing to society, holding a strong belief in equality and humanitarianism, and not being wasteful and ostentatious. But they are a rich country, making much of their wealth from an industry responsible for creating greenhouse emissions.

DENIAL OF RISK

The European nation threatened most by sea-level rise, the Netherlands, ranks at the very bottom of the level of concern regarding climate change in ACNielsen's 2007 global study of nations. And in 2006, Sammy Zahran and co-authors found that, in the US, respondents living within a mile of the nearest coastline at negative relative elevation to the coast are less, not more likely to support government led climate initiatives.¹⁴

Lorraine Whitmarsh¹⁵ explored whether relevant experiences of flooding and air pollution influence individuals' knowledge, attitudes, risk perception and behavioural responses to climate change. Perhaps surprisingly, interviews and a survey conducted in the south of England, indicated that flood victims differ very little from other participants in their understanding of, and responses to, climate change, but that experience of air pollution does significantly

¹³ Kari Marie Norgaard (2011): *Living in Denial - Climate Change, Emotions and Everyday Life*; p. 71

¹⁴ *Ibid*; p. 76

¹⁵ *Are flood victims more concerned about climate change than other people? The role of direct experience in risk perception and behavioural responses*; Lorraine Whitmarsh; Tyndall Centre for Climate Change Research, Cardiff University; 2007
<http://www.cf.ac.uk/psych/home2/papers/whitmarsh/Whitmarsh%20J%20of%20Risk%20Research%202008.pdf>

affect perceptions of, and behavioural responses to, climate change. Air pollution victims are no more likely to cite pollution as a cause of climate change than non-victims, but they do have higher pro-environmental values. Respondents with these values are significantly more likely to consider climate change a salient risk and to take action in response to it. Therefore, the relationship between air pollution experience and responses to climate change may be indirect and mediated by environmental values.

Contrary to expectations, the research found that flood victims differ very little from other participants in their understanding of, and response to, climate change. This was clear from both the interview data and survey responses. Although flood victims are more likely to feel that climate change is an issue of personal importance, they are no more knowledgeable, concerned or active in relation to climate change than people without flooding experience. Even flood victims who cited climate change as an issue of personal importance in the survey were no more likely than other people to attribute this to increased flooding from climate change. Furthermore, flood victims are no more likely to mention flooding as a consequence of climate change than other groups. When asked what actions they were taking out of concern for climate change, nobody explicitly mentioned strategies to adapt to those changes.

THE BERNIE MADOFF PONZI SCHEME¹⁶ - denial in action

In the US, Bernie Madoff was a financial king. He had helped to create NASDAQ, and became its chairman. He set up one of Wall Street's most successful broker-dealers. He was a generous and prominent New York philanthropist, and was well connected within social and financial circles. He was an upstanding member of the Jewish community, a political donor (mainly to Democratic candidates), and a great man. He was charming. People trusted him. Their money was safe in his hands.

At the end of 2008, Madoff was arrested and charged with running the world's largest Ponzi scheme, which defrauded people, including many of Madoff's friends, of an estimated fifty to sixty billion dollars. He was accused of running an "affinity scam", which largely preyed on people in the Jewish community like himself. Madoff joined all the right Jewish country clubs and gave to the right Jewish charities, which allowed him to fleece some very deep pockets.

Investigators found evidence that he was also taking money from well over three hundred and thirty nine funds in over forty countries, including Ireland. When the financial crash happened, his investors rushed to get their money back, but of course it no longer existed. Madoff's scheme lasted for twenty years, a remarkable feat considering most pyramid schemes collapse after a year.

Yet, Bernie Madoff was a very rich man. By 2008, he and his wife were worth just under one billion dollars. He was apparently making so much money from his broker dealership that there was no reason for him to cheat. If he needed more, he could have sold the business and retired. And he wasn't a compulsive thief, neither did he have any gambling or other addictive habits. So why did he put everything he owned and loved at risk?

In an interview in June 2009, after he was sentenced to one hundred and fifty years in a US jail, Bernie Madoff claimed he had started the racket almost by accident - a liberal interpretation of the truth. He had, in fact, drifted into the pyramid scheme to cover his inability to admit that he had screwed up. Years before, he had promised his investors that he would grow their money through stock picking and market timing. When things went pear-shaped, he could not admit defeat. Instead, he set up a new scheme to sort out the losses. This is not too surprising, as other financial rogues like Nick Leeson have fallen for similar reasons - you keep

¹⁶ *Harry Markopolos (2010); No One Would Listen - a true financial thriller*

digging to get out of the hole. What is interesting in this case is how Bernie Madoff so blatantly brought so many of his close associates and friends down with him.

His Ponzi scheme was simple. Money from new investors was used to pay existing clients who wanted to pull out, and Madoff created false trading reports. People were so excited with the consistency of their financial returns that they roped in their friends and relatives, who passed the good news on to their social circle, and so on and on. There was always fresh money to call on. Existing investors were told that the fund was thriving. If anyone wanted to withdraw the profits, they were welcome to do so. And they all trusted Bernie Madoff.

The real shocker about this case is that back in 1999, an unknown number cruncher, called Harry Markopolis looked at Madoff's strategy and worked out that the numbers didn't add up. For the next ten years, Markopolis and his investigative team tried desperately to warn the government, Wall Street and the financial press about Madoff and his crooked scheme. He brought his concerns to the Securities and Exchange Commission (SEC), the independent and non political agency which was set up by President Franklin Roosevelt to regulate the securities industry, on five different occasions. But no-one wanted to listen. Markopolis reckons many of the people involved in the banks and other financial institutions smelled a rat, but they chose to turn a blind eye. And he says that the SEC ignored his submissions more out of incompetence than complicity. They couldn't believe it was happening.

Madoff, for his part, in that interview in 2009, said that he was astonished that he hadn't been found out by the SEC, calling its investigators idiots, assholes and blowhards.....

