

Oops Christian hope in the face of profession error.

Rev Dr Robert Brennan,

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Abstract

One of the most daunting aspects facing the scientific community is how should we best act, particularly in situations where our research or recommendations may lead to significant changes to society or public policy. How do we choose when our conclusions may initiate a chain of events out of our control or conversely our hesitancy may lead to inaction when decisive action is needed? Are we condemned to analysis paralysis or yielding to pressure groups who say “But I’m sure I’m right!” Indeed in some cases technological solutions to major problems exist – but can we live with the consequences?

What is needed is a simple underlying process for helping people to decide when to act how and to act. When dealing with the highest stakes such as health or the environment too often it seems these are the times when our intellectual grasp of the realities is limited, uncertain, confused or (usually discovered after the event) ultimately simply wrong. In the midst of this the professional continues to be human and is as prone to speculation, being as emotionally driven to play the knight in shining armour as any member of the community.

These issues are not new. During the development Natural philosophy the precursor to modern Science these concerns were known and the discipline of cautious humility was developed. Disciplined humility became one strength of the scientific enterprise. Possibly we need to remind ourselves that it needs to continue to be part of the essential culture of scientific rationality. The development of scientific humility has theological roots in Francis Bacon. These roots remind us humility does not exclude decisiveness. When linked with a desire to compassionately best understand and serve God, other and the world, we have the foundations of way to act.

Is the certainty of correct action guaranteed? Absolutely not! Nonetheless, it is a better strategy than a number of others. We may, for example, invest in a strategy and later be faced with consequences. Mistakes can be made. Even so, a Christian theology always retains hope.

Humility, decisiveness and hope: These scientific disciplines are in themselves theologically informed. We must act well, but act nonetheless.

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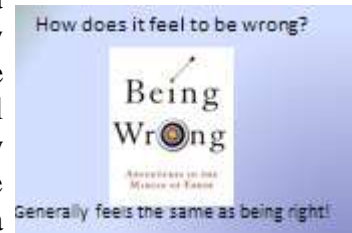
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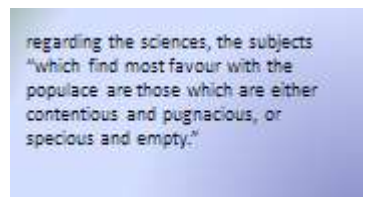
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Social commentator Kathryn Schulz opened her TED talk by asking the question, “What does it feel like to be wrong?” She reminds us that the feelings of dread and embarrassment that we usually associate with being wrong are not how we feel when we are wrong, but how we feel when we find out we are wrong. How we feel when we are wrong is no different to how we feel when we are right. Ultimately Schulz’s answer that we should simply enjoy our human fallibility is inadequate when confronted with the consequences of serious error. I will suggest that the beginnings of a more robust response can be found in the Christian tradition on those occasions when the consequences of error are too great to bear.



One of the most daunting aspects facing the scientific community is how should we best act, particularly in situations where our research or recommendations may lead to significant changes to society or public policy. Mistakes may occur which may eventually lead to deleterious effects for individuals, society and even for the world itself. How do we choose when our conclusions may initiate a chain of events out of our control or conversely our hesitancy may lead to inaction when decisive action is needed??

The leader of the English government once made the observation regarding the sciences, that the subjects “which find most favour with the populace are those which are either contentious and pugnacious, or specious and empty.” (Bacon 1620, p.7) This comment by an astute statesman has a tone which rings all too true in current public environmental debates. After the hottest year on record and when “seven of Australia's ten warmest years on record have occurred in the 13 years from 2002” (Australian Bureau of Meteorology 2015, p. 1) a casual observer of the debate in public sphere could still be forgiven for concluding that the debate is still about whether climate change is real or that it is all about the real or imagined impact of carbon pricing. Whereas the real issue is, how can the heating trend be changed or reduced? Whereas, carbon pricing is merely one of a subset of strategies to achieve reductions in one greenhouse gas. Mick Pope outlined a number of these this morning.



This government leader was English rather than British. He was Lord Chancellor rather than prime Minister. He was Francis Bacon, parliamentary leader, intimate friend to kings and queens, a mentor of Isaac Newton, theologian and the person largely responsible for the development of the Scientific method as it is now known.



He promoted, ultimately successfully, ways to overcome human failings and increase knowledge in an age beset with the radical and ethical implications of a range of new technologies. (Bacon names gunpowder, silk, magnets, sugar and paper. (Bacon 1605, p.341) As an elder statesman Bacon devoted his life to promoting better governance and better ways to increase learning. Dealing with Natural Philosophy he was concerned with researchers who “when they should produce fruit and works, end in contentions and barking disputations.” (Bacon 1605, p.6) In addition he was concerned about “scientific dictators” who confidently claimed “the subtlety of nature, the hiding places of truth, the obscurity of things, the entanglement of causes, the weakness of the human mind” made only ignorance possible. (Bacon 1605, p.8)

Bacon developed his method as a best way to rightly discern truth about the world around us avoiding endless and useless disputation on one hand and hopeless resignation on the other. This

emphasis on hope was singularly significant for scientific method as his influence predated by a generation the confidence widely engendered by Newton's magisterial development the laws of physics. Bacon's hope is ultimately theological and his method developed to deal with the harsh reality of human fallenness and finitude. He "saw in the sciences the prospect of restoring, or at least repairing, the losses to knowledge that had resulted from the Fall" and described "his goal as 'the true end and termination of error'", suggesting "that this could only be accomplished if knowledge was 'discharged of that venom which the serpent infused into it'".(Harrison 2009, p. 1,9)

Bacon argued that logic alone is insufficient to overcome the errors and idols of people's minds. He names four classes of error/idols, the first class Idols of the Tribe or perception; the second, Idols of Plato's Cave or limited perspective; the third, Idols of the Market Place or the shared error; the fourth, Idols of the Theatre or preconceptual blinkers. (Bacon 1620, p.283-285) These require a little explanation which shows their comprehensive nature. The errors arise by failing to realise human limits – in effect idolising our abilities. There correctives – disciplined use of instruments rulers, telescopes and microscope. Limited perspectives are addressed by peer review. This is not error free the whole learned community might chase same unworkable theory, eg; Phlogiston in 17th and 18th Centuries prior to the discovery of oxygen. The fourth and last class have been overcome by people seeing the unexpected such as Einstein on photoelectric effect and relativity and Fleming with penicillin. Bacon illustrates this by asking if anyone could have imagined where the new stronger finer wonder fibre silk actually came from.

Neither logic alone nor correctives to any one of these classes of error alone provide an answer to scientific error. In Bacon we can see the development of the scientific disciplines of humility, caution, review, repetition and persistence as tools to overcome human limitations. If one solution does not work, and it may well not, then other strategies need to be developed. Persistence is also one the scientific disciplines.

The mythos of the scientific hero is that greatest scientists possess all of these characteristics in abundance, whereas the reality often falls far short. Ironically these disciplines were put in place to overcome our all too human failings, including pride, arrogance, confusion and uncertainty. Disciplined humility became one strength of the scientific enterprise. Possibly we need to remind ourselves that these disciplines need to continue to be part of the essential culture of scientific rationality as a corrective to action at all costs. To these disciplines Bacon adds prayer and daily devotion as essential tools for learning the truth about the world. (Bacon 1620, p.12, 28)

These theological roots of scientific method remind us that humility does not exclude decisiveness. The foundations of way to act lie in a desire to compassionately best understand and serve God, others and the world. Bacon concludes let no one;

maintain that a man can search too far, or be too well studied in the book of God's word, or in the book of God's works, divinity or philosophy; but rather let men endeavour an endless progress or proficience in both; only let men beware that they apply both to charity, and not to swelling; to use, and not to ostentation; and again, that they do not unwisely mingle or confound these learnings together.(Bacon 1605, p.41)

The end results while less error prone is far from perfect. Bacon makes no such claims of perfection. So where is hope? It is an expression of faith. But we may well and will in all probability ask, "What if we still get it wrong?"

**Mistakes
are
Inevitable!**

The simple answer is that we will. In Bacon's time the consequences were similar: people die; the person getting it wrong may die; lives and careers are destroyed; governments fall; nations cease to exist, intercontinental trade and immigration stop; farming may turn to famine; pollution, economies and technology may make life unendurable. The only difference now is that the stakes can be higher and may in time involve the fate of the whole of humanity on this world.

We will make mistakes.

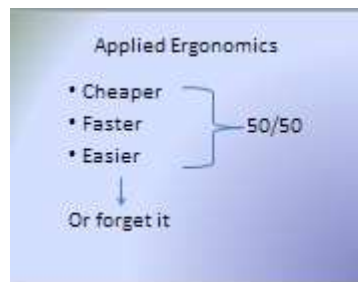
Even using the best of methods we will make mistakes. Even when we don't people may run with exactly the wrong message and sit with the contentious and pugnacious, or specious and empty. These issues are not new. When dealing with the highest stakes such as health or the environment too often these are the times when our intellectual grasp of the realities is limited, uncertain, confused or (usually discovered after the event) ultimately simply wrong. In the midst of this the professional continues to be human and is as prone to speculation, being as emotionally driven to play the knight in shining armour as any member of the community.



The experience in the field of Ergonomics has shown a very low uptake of solutions to crippling problems. Often a "fix" effectively removes the skill sets of skilled trades people and often does not get it right or the process is moved off shore where it is done less safely. The rule of thumb I developed was that a solution had to be easier, faster and cheaper. If it wasn't all three then you had no chance of change. If you had them all then there was only 50/50 chance of change succeeding.

Eg; wire fixing tool in use in Europe and UK but not in USA or Australia – haven't

won the unions over. Often more was achieved over a cup of coffee than in all the official reports I have written.



As Theologian Dutney once stated in relation to medical ethics, "Sometimes science delivers truly wonderful results that are rightly celebrated and publicised. But usually the successes are mixed with disappointed hope and sorrow. And everyone knows you do not control the mix. You risk it." (Dutney 2001, p. 19-20) you bear the responsibility. His conclusion has wider application. Ultimately we act we "play God" even though we know we are not and even when we know that this risks hubris. We act because we know that doing nothing is worse. However when we act in all likelihood is a mixed blessing. It remains a risk.

Nevertheless knowing what to do and trying to avoid mistakes is not enough. The trouble with most ethical treatments is that they are aimed at preventing mistakes being made. While this is well and good. What is never addressed is how do we live with the consequences? How do we live with our mistakes?

I wonder how the governor in Martinique who Bob White mentioned would have lived with it if he survived? He and his family died.

Firstly we need to realise the error, remembering that being wrong usually feels like being right. This is not an uncommon experience, whether it is the doctor prescribing the new drug that has unintended side effects, or the protective measure introduced on the factory line that cripples the production or where people focus on the seating and style rather than the shift and substance.

Barth's conclusion is that if you come to call what is evil, good then you have done something wrong. For Barth it was the key leaders of liberal Protestantism calling World War I good that led him to rejecting the whole liberal ethical programme.

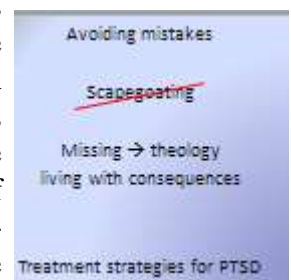
Barth's conclusion is that if you come to call what is evil, good then you have done something wrong.

It's happened, what do we do? We will live with the consequences, there will be trauma and stress and all of the things which go with that. That is whether we have been the ones promoting an action that has caused disaster or were the ones preventing it. It seems likely in our increasingly litigious society, that recrimination and retribution will follow. If we act and act in error we may be made scapegoats. Who knows we may even think it justified.

How do we live with the consequences? How then do we live with the person in the mirror?

This is where Shulz's notion of embracing our common human fallibility fails. Because sometimes the consequences of mistakes are far more than we can bear. The possibility of post-traumatic stress is real and cannot be lightly dismissed by embracing our fallibility or simply accepting the consequences. The following theological exploration offers one way to look at the issues which cannot be in itself a substitute for treatment.¹

However it is in relation to the largely unexamined ethical issue of consequences that we can find in the Christian gospel a better way than scapegoating, blame or self-blame. In our error and fallibility, the gospel of Christ offers grace and forgiveness. Neither are easy things either to offer or to give when consequences are high. When we make high stakes decisions grace is not cheap. Surely the one or the community who destroys lives or ruins the world are least deserving of favour. But this is precisely the definition of grace. Forgiveness even self-forgiveness cannot be given unless we own the reality of the hurt and the irreversibility of the harm done. Only when we recognise its reality, is it possible to begin to count the cost of forgiveness and then to decide whether to give this great gift.



In those cases there is still a word of hope in the gospel. The Apostle Paul, himself a man who made lethal mistakes encourages people struggling with opposition as a result of their actions. Paul theologically interprets Psalm 69 in Romans 15:3, For even Christ did not please himself but, as it is written: "The insults of those who insult you have fallen on me." What Paul suggests is that the vicarious nature of redemption extends to Christ taking on the ongoing blame and insult levelled at those who seek to participate in the ongoing mission in the world. It is Paul's way of explaining how he bears the unbearable lethal consequences of his actions as a persecutor.



It is not enough in this context to simply to assert the notion of vicarious redemption unapologetically. Christopher Hitchens described this notion as evil or poisonous and the most repulsive concept of Christianity. If vicarious redemption is taken as a simple or cheap solution then Hitchens is right.



¹ PTSD is a serious condition. In Australia you may begin to find resources for help at <http://www.beyondblue.org.au>.

As Lewis shared this morning forgiveness in Christ cannot be a "get out of jail free card". We need to count the cost. If it is an easy out consequences are swept under the carpet. But this is little different to more secular ways of responding to consequences such as developing a "thick skin", minimizing problems or simply ignoring them. Shulz and Hitchens argue that we should accept the consequences of our actions. I would suggest that neither have had to deal with anything as serious as the gut wrenching consequences of destroying life, or ending an industry. Some consequences cannot be born and this is where the gospel offers hope. Only when we own the reality of the magnitude of the consequences can we appreciate the value of the redemption. It is a way to be able to live with the consequences of our actions, when they cannot be humanly born.

If by our mistakes we destroy a life that is unbearable. If we impoverish a community, that is worse. If we destroy the world, who will be left to mourn let alone entertain the remote notion of forgiveness?

Nevertheless, we must act even if forgiveness is not forthcoming from the world around us. As Theodore Roosevelt another leading statesman and member of the church of England, said;

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."

In the very act of acting which is itself a step of faith there is always hope. For example Umberto Eco in *Serendipities* reminds us that in history that the greatest advances in human society and culture have come through mistakes of the tribe cave, market place and theatre.

Approaching how we deal with environmental issues requires an act of faith that there are answers. The discipline of humility encourages us to accept that we do not know what the answer is or will be. Is the certainty of correct action guaranteed? Absolutely not! Nonetheless, it is a better strategy than a number of others. We may, for example, invest in a strategy and later be faced with consequences.

Mistakes can be made. Even so, Christian theology always retains hope even when the consequences are unbearable. If anyone had cause to give up hope it was Bacon destroyed in his personal and public life. He was no stranger to conflict and controversy, Bacon remained an influential leader even after his personal enemy had him disqualified and ejected from parliament. Then to ensure that it was taken personally he then stole away and married the love of Bacon's life. Yet he still gave himself to seeking a better way by responding with the disciplines of humility, decisiveness and hope.

We must act in faith. Faith retains hope.

Faith commits us to action. Faith commits us to love and care.

We cannot keep the two in balance without Christ's help by the Spirit.

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Risk matrix
Human inability to assess risk.
Eg lotto,

Bayesian reasoning if 1% have a disease and the standard test is 90% accurate then what is the likelihood that a person has the disease if the test is positive?
Most doctors when asked said about 75%. Actually using Bayes theorem it is

Less than 10%! In this case other tests are required.

We are wise to be cautious.
On other hand
He who hesitates is lost

The place of call. Eg Graeme Clark saying that the answers of some problems came after prayer. This is in one of the more widely used school religious education programmes of the last decade.

Approaching how we deal with environmental issues is an act of faith that there is an answer.

The discipline of humility encourages us to accept that we do not know what the answer is or will be.

Faith in order and predictability in nature

Faith points to human limitation, but remains unclear as to what that is.

The big debate of the 17th century never concluded is how much can we grasp? Therefore the answer may be difficult to find or not easy but is worth exercising persistence.

Faith retains hope.

Faith commits us to action. Faith commits us to love and care.

We cannot keep the two in balance without Christ's help by the Spirit.

If one solution does not work and it may well not then other strategies need to be developed.

Eg Change is possible in the workplace if there is a solution to a life threatening problem or crippling work practice. However this will only be effective if and only if

the solution is 1) quicker than the original work method, 2) easier than the original and 3) cheaper. Even then you only have a 50/50 chance of the change being adopted.

More achieved over a cup of coffee than in all the official reports I have written.

Unitended consequences

Lawson's loaded dog – so much for fishing

Semmelweis and disinfection : The cat was finally out of the box. In recent years, first-rate hospitals like Vienna General practiced autopsies as a method of studying anatomy. What better way to study illness than to sift through the diseased, malfunctioning organs in question? At Vienna General, every single deceased patient was taken to the autopsy room for examination.

But the doctors and medical students who came from the autopsy room went directly to the maternity ward with at best, a quick washing of their hands. The germs from the autopsy carried themselves all the way to the maternity ward, where the constant prodding and poking of the uterus by the doctors allowed them to fester and cause puerperal fever.

Semmelweis immediately ordered all doctors and medical students to disinfect their hands in a chlorinated wash after autopsies, to make sure that all germs were rid of. The rate of maternal death dropped to a whisper above one percent, saving millions, perhaps billions of lives in the process.

Serendipities – Eco

Three mile Island and changes to emergency response. – do nothing and work it out first. Ref Thomas Trigge.