THE INCONVENIENT MIND

PSYCHOLOGICAL INSIGHTS

PART ONE

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INTRODUCTION: HOW TO USE THIS PAPER?

__ For more than 35 years[1] scientists have been advocating that **the psychological impact** of both Global Warming and the way it is reported needs to be considered **when designing campaigns** to change people's perceptions, attitudes and behaviours to support climate policy and change to more sustainable life-styles. Such cultural change is a must in order to create the change needed to prevent climate havoc. There is an increasing agreement among psychologists on why humans have such difficulties to respond to a highly likely future catastrophe. Yet, they face the same fate as their natural science colleagues (or worse) as their knowledge is largely ignored, even by those who praise and preach the facts of climate science.

__ In **Part One** of this paper, we give a very brief **introduction to four complementary theories** on why we think and feel about climate change the way we do. This part provides the science behind the **recommendations** for our climate work that we propose in **Part Two**. As the theories are complementary and overlapping, the proposed applications stem from a combination of these theories. In **Part Three**, we **analyse the specific cognitive challenges relevant for specific projects** that we are currently working on, like the Climate Emergency work, Urban Revolution and the school strikes, and give specific advice as illustrations on how project teams should (re)design their work to create more impact. While it does makes sense to follow **the flow of the document**, practitioners can also start reading Parts Two or Three and only come back to Part One if they want to better understand why such advice has been given. All three Parts will be living documents that we will amend over time. Especially in Part Three we will add more and more specific advice for individual projects.

__ When talking about psychology, we are not talking about our audiences psyche only, **we are equally talking about ourselves as human beings,** as the same mechanisms influence our own decisions (e.g. when we rather avoid talking about climate change at our family reunion - more on this later under climate silence). Dealing with psychology requires humbleness to accept that we are not the masters of our minds, and compassion with others and ourselves, for our mind is a tricky creature designed to keep us alive and happy, even if it means to meddle with the truth. So reading this from the perspective of "where am I on this" is as useful as reading it from the perspective of "what does it mean for my work".

[1] Fischhoff (1981), Hot Air Psychology of climate change

Part ONE

THEORY ONE: OUR BRAINS ARE ANCIENT AND NOT MADE FOR THIS WORLD

For more than 95% of the time since *homo sapiens* evolved[2], humans have been hunters and gathers, living in small groups spreaded throughout the land, being one species under many, both predators, as well as vulnerable pray. While our brain has made us very adaptive, it is also full of ancient relicts, or so called *biases,* designed to ensure our survival as hunters. These thinking shortcuts still help us managing the flood of daily decisions we need to make. Nevertheless cognitive biases can lead to irrational interpretation of a situation and are therefore insufficient, or even counterproductive, for solving complex 'future' problems like Global Warming.

Cognitive biases[3] mainly influence our subconscious (intuitive) thinking and our emotions. They are useful mental shortcuts to allow the brain to handle massive amounts of information, decide what to remember, create meaning, and act fast.These biases are a result of our evolutionary biology, they are not learned or socially acquired. But their influence can be reduced through training.[4] While generally useful, these biases support short-term decision-making and conservatism and thus are dangerous when influencing long-term decisions in a changing world. In relation to climate change, they are one reason why people consider climate change a serious problem when asked, but hardly think, talk, or do something about it in their daily lives. Cognitive biases make our lives hard when we are trying to change our habits for long-term health benefits, or to change towards more sustainable behavioral patterns. While scientists have identified several hundred biases the following ones are those repetitive mentioned by scientist in relation to climate change.

1. We only react to threats that are imminent[5] and would affect us today but discount with unreasonable rates the threats of the future.
2. We react to instantaneous changes, while we are happy to accept changes that happen slowly. A flood or a forest fire grabs our attention but not the slowly increasing of the temperature of the planet.
3. We react to intentional threats - those that have a clearly identifiable vilain (e.g. terrorism).
4. Combined with having a bit more time at hand, *the optimism bias* kicks in - "it won't be so bad".

[2]Homo Sapiens evolved roughly 350,000 years ago(Anthropocene era); and humans started shaping their environment 12,000 years ago with the agricultural revolution. The large Acceleration when change became global is dated to 1945 with the first nuclear explosion.
[3] Kahneman (2011) Thinking fast and slow (book) see also Wiki overview of cognitive Biases
[4] Morewedge (2015) Debiasing Decisions. Improved Decision Making With A Single Training Intervention. Policy Insights from the Behavioral and Brain Sciences
[5] Daniel Gilbert: Global Warming and Psychology, If only gay sex would cause Global Warming

5. We also have *a social bias*: when everybody runs away, we do too; but even if we perceive a threat, if nobody runs, we consider it safe to stay or even odd to panic.[6]

But we are not helpless victims of our own biases. Individuals and cultures have developed multiple mechanisms to keep biases in check. On an individual level, *training*, *discipline* and *mindfulness* are long held strategies, and on a cultural level, *rules, norms, rituals* and more recently *nudges* are tools to mitigate them. As cognitive biases are stimulated by sensations and information, communication can be tailored and people's environments designed in such a way to silence these triggers and lessen their influence on our decision-making. One can even create a trigger that exploits cognitive biases in a positive way.

THEORY TWO: DRAGONS OF INACTION[7]

Even if we consider climate change as a threat, structural and psychological barriers impede us making behavioral choices that would facilitate mitigation and adaptation actions. Such discrepancy is explained by multiple models including the attitude-behavior-gap[8]. Robert Gilbert has identified 33 of what he calls Dragons of inaction. Some overlap with those features we already explored in the ancient brain theory above. But he adds several barriers that are not evolutionary but are established through our convictions and lifestyles, thus being different for different people.

Ignorance is one of these barriers; the degree to which we are or feel informed about the problem of global warming influences what we could do against it. But also our **ideologies** can be barriers, for instance, if a person believes free markets or human/technological ingenuity can solve every problem, or that global warming is a divine punishment. Striving to be accepted by our social environment, **social norms, shared values and beliefs** can equally be barriers.[9] Also, if we fear **wasting previous investments** (like a car or a coal power plant) or are afraid to waste resources in a futile attempt to change (either because we might fail or because not enough people would join us) can put people off.

Lots of behavior research on sustainability and health has identified similar barriers[10]. We all carry these barriers but, in contrast to cognitive biases, they are acquired throughout our personal development and thus more individually distributed. Theory two therefore has implications for the kind of audience research we do to identify the relevant barriers and work towards removing them

[6] George Marshall: Don't even think about it
[7] Robert Gifford: The road to climate hell (new article) and Dragons of inaction (scientific publication)
[8] Papaoikonomou: Towards a Holistic Approach of the Attitude Behaviour Gap in Ethical Consumer Behaviours: Empirical Evidence from Spain
[9] Fielding & Hornsey (2016)A Social Identity Analysis of Climate Change and Environmental Attitudes and Behaviors: Insights and Opportunities
[10] List of research on this issue:

through our (climate-related) projects. Only if you know the relevant barriers affecting your audiences, you can develop strategies to remove them. Climate advocacy groups have been good to address the '*Ignorance Barrier*" through information and engagement campaigns and the '*Ideology Barrier*' through value based segmentation, but to understand our audience we need to develop additional research tools (see also the chapter on denial). Campaigns to remove barriers of inaction can aim to change social norms, redesign the environment around people or modify the narratives that influence their worldviews.[11] As people are often unaware about their own barriers, a powerful campaign tool can be to make people aware not only of their unsustainable behavior, but also of their mental barriers that prevent them from changing.

THEORY THREE: FEAR AND HOPE

Many behavioral change models consider a combination of motivation and agency (both the will and the ability to change) as basic elements for behavior change.[12] Science and engagement experiences have proven that motivation can be better induced and sustained through emotions rather than information.[13] Scientists and activists have for decades stressed the urgency of climate change and the catastrophic consequences of inaction thereby deliberately or unintentionally inducing worry and fear in their audiences. The good news is that fear based messages work to change attitudes and behavior[14], the bad news is that for issues like climate change their impact might be limited. Why is this?

1. Due to the slow, abstract and distant nature of climate change (see ancient brain biases), global warming does not induce fear that stimulates immediate action.[15]
2. Fear and worry usually wear off over time; climate change risk has been communicated for decades now. This might be one of the reasons why the worry about climate change has declined in the Global North in the past 10 years.[16]
3. Fear works best to motivate one off actions but is far less effective in inducing sustained behavior change as people aim to reduce their perception of fear over time, as a coping mechanism.
4. Fear is also not suitable for complex behavior or mindset change when multiple behavior or whole lifestyle changes are required, as people tend to take single actions to defeat their negative feeling and then inflate its

[11] See also our briefing papers how to campaign on Social norms, Narrative and Shaping the environment
[12] Wikipedia overview of behavior change models As example Fogg's Behavior model B=MAT
[13] Heath & Heath (2010) Switch How to Change Things When Change Is Hard (Book)
[14] Tannenbaum et al (2015) Appealing to Fear: A Meta-Analysis of Fear Appeal Effectiveness and Theories
[15] Per Espen Stoknes: What We Think About When We Try Not To Think About Global Warming
[16] Capstick (2015): International trends in public perceptions of climate change over the past quarter century

impact creating a false feeling of security, leading to no further action (my rooftop solar panel is fixing my carbon footprint).[17]

5. Fear is an emotion that focuses our perspective on the danger, thus reducing our imagination, creativity and altruism - all attributes urgently needed in order to master the challenges of climate change and find sustainable solutions.
6. In the absence of tangible actions that can result in short term relief, fear and worry can impair mental health thus triggering denial.

Psychologists have warn that 'being worried' has evolved as a social norm, but that our mind is not built to sustain this ongoing mental pressure.[18] Anxiety and depression have become a shared cultural experience[19]. And climate anxiety has become an increasing phenomenon.[20] We have personal limits as to how much worry we are prepared to carry on our shoulders.[21] Too much worry and anxiety can result in despair, depression and burnout. Anxious societies are also more prone to take irrational decisions and becomes socially unstable. Another way of the human mind to cope with mental stress of fear, is denial (see more on denial later).

A common strategy to mitigate the negative impacts of fear is to combine the worrying message with hope. Hope is also often portrayed as combining motivation (positive encouragement) and ability (psychological agency = you/we can do it). While a review of multiple behavior change research (health and sustainability) shows that hope-related messages are often less effective in inducing immediate action than fear-based messages,[22] a lot of climate communication specialists recommend positive or hope-type messaging as better way to create sustained attitude and behavior change.[23]

Even more importantly emotions cannot be seen as a simple lever but need to be understood within complex cognitive feedback mechanisms, e.g. the state of mind of the audience is significantly shaping the impact.[24] 'Hope' to achieve specific outcome is in fact not the antagonist but actually a companion of 'fear', as in "we hope that the outcome will be good but, at the same time, fear we might fail". Therefore, messages can either be perceived as 'hopeful' or 'fearful' depending on the mental stage of the audience. A 'hope' story on growing solar take up can be easily perceived as 'too little, too late' by a more pessimistic person. Also, a narrative may change its impacts over time. The hope that was built up in the lead up to Copenhagen turned into despair and depression after the negotiations

[17] Read also introduction on the spillover effect, for the same reason fear and guilt do not work to create a spillover from one pro environmental behavior to another.
[18] Constant Anxiety Won't Save the World
[19] How anxiety became societies prevailing condition
[20] Psychologist explain our climate change anxiety
[21] CRED (2009) The Psychology of climate Change communication
[22] Hornsey (2016) A cautionary note about messages of hope: Focusing on progress in reducing carbon emissions weakens mitigation motivation
[23] Stern (2012) Fear and hope in climate messages
[24] Chapman et al (2017): Reassessing emotions in climate change communication

failed. A better alternative is to to move beyond hope and fear and to accept uncertainty.[25] Helping people to go beyond the hope for success will relieve them from their anxieties and give them the patience we need to be effective.[26]

Besides motivation, 'agency' is the second most important lever to create behavior and attitude change. For people to feel they are able to manage the challenges ahead, it is important to build their confidence and courage. However the type of confidence we're talking about here is not about being certain that we/they will be successful no matter what. Instead, it is important to activate the belief (and skills) to feel capable of manoeuvring uncertainty. Building agency as a mindset is therefore equal to building psychological resilience by building confidence in our ability to adapt to and mitigate climate change.

Another form of positive climate change communication that has been recently coming up is to frame climate change as an opportunity to change old societal challenges. Creating clean, cheap and accessible energy for everyone, reducing food waste, increase education for girls and access to family planning, protecting tropical forest and peatlands, eating less meat are all objectives worth pursuing. As they all have significant impacts in reducing our carbon emissions, they actually constitute real win-win situations. If we haven't been motivated enough to tackle all these challenges until now, global warming should certainly give us sufficient incentive to tackle these human challenges once and for all. Project drawdown[27] builds on creating the belief that we are anyway doing the right thing when reducing carbon emissions. There is unfortunately no data available yet to vet how this approach impacts the human mind.

Climate communication, to a large degree, still relies on inducing fear and worry to underscore the urgency of the problem. When doing so climate change campaigns and media first should consider that an increasing number of people has become numb and do not respond to these messages. Second, we are becoming more aware of the negative consequences fear induced campaigning can have on the campaign outcomes, but also on the social and mental fabric of societies. A precautionary approach to climate campaigning would therefore suggest to avoid such messaging if negative impacts can't be mitigated. The latter is most likely only possible if sufficient information about the emotional resilience of the audience is available. Message testing that only measures reach is going to be insufficient to assess the emotional impact that those messages might have.

On top of that, even when messages and images are not intended to create worry or anxiety, they still might accelerate those emotions in an already anxious person. So even when we are communicating hope we should do so with care. Hope should be connected to processes related to what we do and how we do it,

[25] "When the forms of an old culture are dying, the new culture is created by a few people who are not afraid to be insecure" Rudolf Bahro
[26] The Place Beyond Fear and Hope
[27] Project Drawdown

and not what we are going to achieve with it. Hope should not be connected to deadlines either, e.g. Copenhagen negotiations or that we have 12 years to stay under 1.5 degrees, as such messages will easily backfire. Even better would be to aim to build the courage and resilience to embrace uncertainty to act and experiment, to fail forward and accept failure as part of our learning process.

Engaging with complex emotional feedback mechanisms on a psychologically sensitive issue like climate change will require knowledge of the mental fabric of the target audiences. While audience research is one way of facing the challenge, it is imperative that climate advocacy groups further evolve from one way communication to a dialog with their audiences. To overcome the scaling limitations of our present channels, chatbot and other tools and technology could offer new exciting ways to make millions of dialogs manageable.

THEORY 4: DENIAL

When thinking of denial around climate, we often think of climate deniers as our adversaries that discredit the climate science. In Psychology though, *climate denial* describes a common phenomenon how humans handle an inconvenient truth. Denial is a typical way for people to manage mental conflicts and avoid dissonances[28] and exposure to negative feelings like guilt, fear or helplessness. Prof. Stanley Cohen asserts "...denial stems from the need to be innocent about a troubling recognition. It is both to know and simultaneously not-to-know. It is to be aware of something, yet at the same time argue and present its opposite in a convincing way [even to oneself]".[29] The concept of denial is reserved for those issues that are emotionally and morally disturbing and therefore—if not dealt with—generate an uncomfortable inner splitting. The term denial is appropriate when the full acknowledgment of what is denied would imply having to act upon it. The lifting of denial would result in an emotional shift, and would require both speaking and acting differently. And sometimes it would result in a substantial change of lifestyle, ethics, and identity.

Denial is not only an individual mental mechanism but also a cultural phenomenon. On a cultural level, denial translates into social norms and worldviews. For example, the justification of racism or inequality in a society. Before slavery or apartheid were abolished whole societies were living in denial that anything about these concepts were wrong, similarly Soviet societies believed in the economic competitiveness of communism far beyond it was obvious that it had been defeated by capitalism. Through establishing strong social narratives and norms societies are able to maintain an irrational, distorted perception of reality. These narratives can be maintained over decades or centuries even when

[28] Cognitive dissonance refers to a situation involving conflicting attitudes, beliefs or behaviors. This produces a feeling of mental discomfort leading to an alteration in one of the attitudes, beliefs or behaviors to reduce the discomfort and restore balance.
[29] Stanley Cohen (2001) States of Denial: Knowing about Atrocities and Suffering (book)

challenged. Nevertheless all three examples show that societal denial can also break down within a short period of time.

After having realised that increased awareness on climate change did not increase climate action, psychologists and sociologists increasingly started doing research around denial.[30] [31] So far, they have concluded that almost all of us are in some stage of climate denial. Denial can come in different forms: denial of the existence of climate change, denial of being responsible or contributing to it, denial of having the agency to make any difference.

Thinking that climate change will create an "uninhabitable" Earth, a threat to our children and the nature around us, already deteriorates the lives of millions of poor people in the world, that our carbon intensive lifestyle is responsible for it, and that most likely humans will not be smart enough to act in time, are thoughts that are unpleasant and inconvenient and are mediated by our subconscious into denial. Some authors assume that the threat of climate change to our personal and species existence triggers people to apply their already existing denial of vulnerability and death to the planetary threat.[32] This denial not only results in sanctioning the next carbon intensive activity without the feeling of fear or guilt, it also censors any information that we receive about climate change that might feel unpleasant and welcomes the slightest confirmation that it will not be that bad.

As said before, denial can also create social norms or tabus that censor discussions about certain issues (for example talking about death or sexual preferences). In the case of climate change the social norm around not provoking unpleasant feelings in or conflict with others creates avoidance of raising the topic in conversations. It is much easier to talk about plastic that is not perceived as life threatening issue than about climate change which might trigger existential fears. This unspoken consent has created what scientists call "**climate silence**", i.e. the absence of climate change from everyday conversations[33]. Denial can also be reinforced by linking it to a social identity. Thus denying climate change is perceived as proof to be part of the desired ingroup. An example of such identity enforced denial is the denial of global warming by republicans in the US. The connection of republican identity with climate change denial in the US has been created through bipartisan debates of climate denial between 1998 and 2008.[34] Climate denial is also reinforced by religious or workplace identities.

[30] Stoll-Kleemann (2000) The psychology of denial concerning climate mitigation measures...
[31] Kari Marie Norgaard (2011) Climate Denial: Emotion, Psychology, Culture, and Political Economy
[32] Dickinson (2009) The people paradox: self-esteem striving, immortality ideologies, and human response to climate change.
[33] George Marshall (2014) Don't Even Think about it. Why Our Brains Are Wired to Ignore Climate Change (book)
[34] In 1998 on 4% more democrats were believing in climate change than republicans. In 2008 this ideological divide on climate change had increased this difference in perception to 34%.

Denying climate change or the ability to mitigate it, has also been proven to negatively influence sound policy making.[35]

Denial and exposure to climate impacts

One way of breaking denial is exposing people right in the moment they experience extreme feelings related to the issue they're in denial. This strategy is, for example, used in hospital emergency departments with smoking patients that search for treatment because they experience chest pain and are afraid of a heart attack. Counselling by medical staff to quit smoking has shown to be effective to increase willingness to quit.[36] Experiencing climate change impacts has therefore often been proposed as a major opportunity to convince people to support action on climate change. However this topic is controversial among researchers. Some research has shown that experiencing extreme weather events can increase people's willingness to support climate policy[37].

Other research has shown that the trauma experienced in extreme weather events can increase denial, as victims fend off against their experienced vulnerability.[38] (when one experiences a traumatic event, the last thing that person wants is to hear that the probability this will happen again soon is increasing). Even post traumatic psychological treatment to increase the individual psychological resilience of victims can increase denial of climate change [39] as people are encouraged to build a self-image of invulnerability in the future. On the other hand building community resilience seems to be a promising process not only to navigate trauma but also to decrease individual and societal denial.

Denial has been identified to be a major obstacle preventing an adequate societal response to climate change. Current campaign strategies and tactics have proven to be unable to break through the state of denial or to even enhance it. Renee Lertzman advises that environmental organizations need to acknowledge the complexity of the human mind and create non-judgemental, collaborative and participatory conditions that encourage people to explore their interior dilemmas. [40] Jem Bendell goes even further, and invites us to learn to accept that climate change will dramatically change our environment and our lives, that people need to go through the phases of grief over this fact before they can act upon it, and finally that organizations and individual can first help to build psychological resilience.[41] After that we can engage in a process that combines adaptation and

[35] Howlett (2013): Why are policy innovations rare and so often negative? Blame avoidance and problem denial in climate change policy-making.
[36] Rasier (2018) Smoking Cessation - The Georgia Emergency Room Project.
[37] Demski (2017): Experience of extreme weather affects climate change mitigation and adaptation responses
[38] Beth Hill (2017): Between Bushfires and Climate Change: Uncertainty, silence and anticipation following the October 2013 fires in the Blue Mountains, Australia
[39] Ogunbode (2018) The resilience paradox: flooding experience, coping and climate change mitigation intentions.
[40] Renee Lertzman (2016) Environmental Melancholia (book)
[41] Jem Bendell (2018) Deep Adaptation: A Map for Navigating Climate Tragedy

mitigation creating a societal debate of what he calls deep adaptation, a three step approach addressing resilience, relinquishment and restoration.[42]

If we consider denial a significant barrier not only to change mindsets, but also to get people to take or accept bold action to combat climate change, the recent scientific research suggests that organizations would need to substantially change their ways of working. Identifying the type of denial that 'troubles' audiences and designing ways for them to navigate these mental states and emotions, would not only change our approaches to public engagement, but also influence corporate and political engagement and advocacy. It would need to build on compassion towards those driven by anxieties, guilt and helplessness, even though one traditionally might consider them adversaries. It would require to supplement our striving for urgency with the necessary patience to listen and engage in a meaningful dialogue.

While identity and values can act as vehicules to anchor denial within a social group (e.g. the republican denial), the primary drivers of denial- anxieties, guilt and helplessness - are not influenced by values. On top of this these feelings are often hidden even from oneself. Thus our traditional forms of audience research using surveys and VBS are insufficient to provide us with the necessary audience understanding to erode denial. Dissolving denial would require much deeper forms of engagement putting an emphasis on facilitating dialogue and experiences that help people to identify and handle their emotions. This will require new skills for campaigners and engagers. The depth of the engagement will create challenges on how to engage the "millions".

CONCLUSION

The 'messiness' of the mind adds a new layer of complexity to strategy and project development. As mentioned before, it will also require a change of attitudes by activists towards their audiences. Compassion and patience will be required if we want to change the minds of people. Some 'easy environmental issues' might be addressed without accounting for the individual and social fabric of the mind, but complex issues like climate change risk rendering campaigns ineffective or even detrimental, when ignoring the psychological and social

[42] In pursuit of a conceptual map of "deep adaptation," we can conceive of resilience of human societies as the capacity to adapt to changing circumstances so as to survive with valued norms and behaviours. Given that analysts are concluding that a social collapse is inevitable, the question becomes: What are the valued norms and behaviours that human societies will wish to maintain as they seek to survive? That highlights how deep adaptation will involve more than "resilience." It brings us to a second area of this agenda, which I have named "relinquishment." It involves people and communities letting go of certain assets, behaviours and beliefs were retaining them could make matters worse. Examples include withdrawing from coastlines, shutting down vulnerable industrial facilities, or giving up expectations for certain types of consumption. The third area can be called "restoration." It involves people and communities rediscovering attitudes and approaches to life and organisation that our hydrocarbon-fuelled civilisation eroded. Examples include re-wilding landscapes, so they provide more ecological benefits and require less management, changing diets back to match the seasons, rediscovering non-electronically powered forms of play, and increased community-level productivity and support. (Excerpt from Jem Bendell's paper.

dimensions. We sincerely hope this compilation of cognitive science insights on climate change psychology provides a compelling rationale to develop a cultural theory of change for climate campaigns. Nevertheless, as interacting with complex systems makes predictions of causality between intervention and impact impossible[43], Civil Society needs to engage in multiple experiments to test the real world applicability of these scientific theories.

Integrating the human dimension into our work will require substantial changes to our approaches to audience research, engagement and advocacy work. Specific recommendations for the design of such experiments will be outlined in Parts Two and Three of this paper.

Creating change within the minds of others, without falling into the trap of projecting our own mental messiness, will require individual and organisational self reflection and honesty on how we as individuals and as a collective are influenced by our minds.

[43] The Conefin Framework: The *complex* domain represents the "unknown unknowns". Cause and effect can only be deduced in retrospect, and there are no right answers. "Instructive patterns ... can emerge," write Snowden and Boone, "if the leader conducts experiments that are safe to fail." Cynefin calls this process "probe–sense–respond".[1]Hard insurance cases are one example. "Hard cases ... need human underwriters," Stewart writes, "and the best all do the same thing: Dump the file and spread out the contents." Stewart identifies battlefields, markets, ecosystems and corporate cultures as complex systems that are "impervious to a reductionist, take-it-apart-and-see-how-it-works approach, because your very actions change the situation in unpredictable ways.