In *The Precipice: Existential Risk & The Future of Humanity*, Toby Ord provides readers with a thorough foundation of fact and idea. He asserts that commitment to existential risk is needed from the fields of "physics, biology, earth science and computer science… history and anthropology… economics and moral philosophy … international relations and political science" (Ord, 2020a, Introduction, para. 19). However, one school of thought is missing from the discourse: psychology. As the essence of human experience, psychology affects how we perceive information in logical and emotive forms, as well as how we move forward from thought into action. Without use of psychological principles, even worthy causes such as existential security fail to persuade people.

The overarching structure of *The Precipice* leads us through the reasons for concern, the risks, and avenues for action. In this paper, I propose the first two components in reverse, as it is difficult to feel motivated toward something we do not understand. From a psychological perspective, what is needed for us to understand the risks? What is needed for us to be concerned? Lastly, what is needed for us to take action?

Curious how others perceived this topic, I asked five family members and friends to watch the 20-minute narrative video that was created to introduce and summarize *The Precipice* (Ord, 2020b). I asked them to comment on the points which stuck out for them, if they felt hopeful or despairing, and if the content was easy or challenging to understand. One of my findings from this brief and informal 'research' was the huge variety in opinion – The same statement made by Ord was "interesting" to one and prompted another to say "I don't care". Each of us sees the world through specific lenses: outcome- or process-oriented; emotionally- or logically- motivated; pessimistic, pragmatic, or optimistic.

As a philosopher and researcher, Toby Ord approaches this topic in a highly logical manner. From my perspective as a masters-level student, *The Precipice* is a challenging read which uses advanced language and concepts, and I would argue that the book is most accessible to people with scientific backgrounds. However, the issue of existential risk applies to all of humanity. As less than one third of the Canadian population holds a bachelor's degree or higher (Government of Canada, 2017), there is a strong argument for reconsidering the accessibility of the information.

It may be that a certain level of critical thinking is a prerequisite to engaging with a topic this serious. Ord calls attention to the need for limiting access to dangerous scientific information (2020a. Chapter 5, "Information Hazards"), and the results of my own small 'study' show that much of our population relies on all-or-nothing thinking. This over-simplification can lead people to assume that science is equivalent with unchanging truth, that humans are powered by greed, or that we are doomed to a catastrophic ending. I do not want to conclude, then, that the book and topic should be adapted to suit every reader.

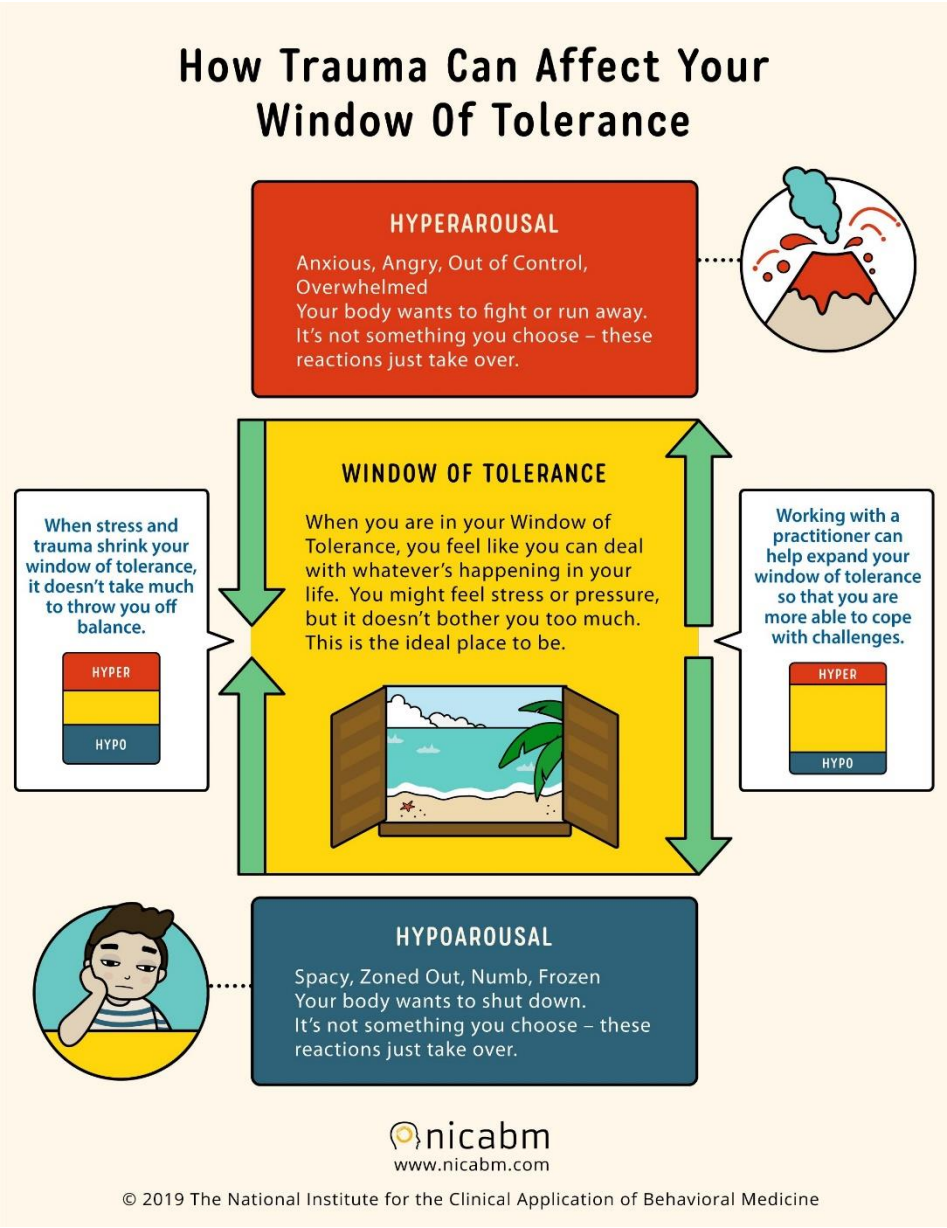
Still, to contribute more human resources toward the issue, we need to educate people of many backgrounds. We can look to Cognitive Load Theory to help us tailor material to diverse learners. This theory asserts that learning is inhibited if the material overwhelms an individual's cognitive resources, and differentiates between novice and expert learners by noting that experts have already formed "schemas", groupings of information which function as one item in the working memory (Patrick Cook, 2006). For example, much of the information in Ord's book relies on some statistical competency, and may be too much for the average reader to process.

A possible strategy for addressing the load of the material is "the use of 'pause-and-reflect' debriefing" (Meguerdichian et al., 2016). For example, trans-generational empathy may be developed in passages where the reader is asked to imagine how they would feel if it were them or their children in an imagined dystopia. We can also use visuals in literature to conveying timelines and statistical comparisons. One friend said about the narrative video: "I was brought back to the present each time that it presented visual representations." Cognitive breaks can be created by chunking information into smaller passages (Patrick Cook, 2006) or summarizing information between sections, and we can increase comprehension without compromising the integrity of the material.

Finally, although statistics are helpful in objectifying our thoughts, it is important to recognize that people may still interpret them subjectively. For instance, figures ranging from 0.001-0.05% of total natural extinction risk per century (Ord, 2020a, Table 3.5) do not scare me but instead create the illusion that the risk is insignificant. When presenting

statistics, we need to explain the consequences of the numbers in practical language so that readers do not come to their own conclusions.

Psychology allows us to consider a facet of experience which many other sciences neglect: how do we *feel*, for example, when we finish reading this book? Are we motivated to pick up the torch, or are we overwhelmed and demoralized? We can look at this through the Window of Tolerance model, which is used by trauma experts to understand the outcome of emotional reactions. If a person's stress falls within their window of tolerance, they will be able to respond calmly, but if it goes too far into hyper- or hypo-arousal, they will be unregulated, unable to continue learning, and their window will shrink further (National Institute for the Clinical Application of Behavioural Medicine, 2021). Just as too much information can overwhelm novice learners within the Cognitive Load Theory, too much emotional content can overwhelm those with narrow windows of tolerance.



Research on climate change in particular shows that pure informational knowledge is not always enough to facilitate belief or motivate action toward a cause. We encounter inaction despite acknowledgement of the difficult reality, as well as "motivated denial, which entails knowing or having access to the facts, but nevertheless denying them". People often resist ideas which question their security and sense of meaning, or which require change and personal responsibility. It is possible to decrease defensiveness by linking the issue with personal motives such as affirmation of beliefs and protection of health, home, and community (Wong-Parodi, 2020).

If we are able to meet the first two psychological needs – cognitive understanding of and emotional resilience to this topic, we are then able to act. Studies of social activists have found that a strategy for combatting burnout is to minimize isolation and build good relationships (Cox, 1970). We need to nurture, in Ord's own words, "our ability to work together, to build something larger than ourselves" (2020b, 0:23 minutes).

We then need to call on many types of people. It is important that each reader feels identified, like they fit into the solution. For example, some therapists currently provide counselling for 'eco-grief', facilitating conversation about existential anxiety. Teachers can begin to introduce the topic in their coursework, for example exploratory sci-fi in creative writing classes, talking about nuclear history in social studies. Toby Ord points to developing survival strategies alongside risk prevention: "In the worst case, we could prepare to weather the storm: using the warning time to stockpile food, build shelters, and plan the best strategies for survival" (2020a, Chapter 3, "Deflecting Impacts").

Finally, Ord is clear that much of our risk profile comes from nuclear technology, and highlights that these risks have historically been in the hands of several small groups or leaders, often acting on impulse or suspicion (Ord, 2020a, Chapter 4, "Nuclear Weapons"). For that reason, we need to invest some thought into the psychology of our government, scientific, and military leaders. A simple google search yields many results for psychological screening in the military; nearly none for politicians. In the United States, the President has the power "to refuse to approve a bill … and thus prevent its enactment into law" (Vetoes, 2021), yet is never evaluated for their mental and emotional stability. Research into the effect of emotional dysregulation and narrow windows of tolerance in

current national leaders suggests that not only does the psychological history and state of leaders influence their threat perception and decision making in critical moments, but also the psychology of their compatriots (Larsen & Stanley, 2021).

In general, I am convinced that this topic is worth having widespread dialogue on. Through various media such as the book and its promotional video, extra materials on the website, and essay contests like this which motivate young people to engage, I have seen that it is possible to create meaningful avenues for discussion, even of such a heavy topic. I enjoyed creating my own micro-replica of this process by bringing my friends and family into the conversation and hearing their varied but equally thoughtful responses. Though it can be difficult to appeal to the many perspectives of humanity, if we make genuine effort to do so, we can in fact make a difference.

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