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Perspective/Viewpoint

Beyond "Crisis" and "Change": Why Climate Needs Stages, Not Adjectives

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ABSTRACT

Climate science has long struggled to communicate urgency proportionate to the severity of the crisis it describes. Terms such as 'climate change' carry neutral or even positive connotations, while 'climate crisis' and 'climate catastrophe,' though more accurate, lack the specificity needed to guide an appropriate response. We propose that climate communication could benefit from adopting a staging framework analogous to the TNM cancer staging system: a model that conveys not only severity but progression and the rationale for proportionate intervention. Drawing on the cognitive science of metaphor, we show that framing shapes perception and decision-making unconsciously. A climate staging system would be low-cost to adopt, faces no obvious organized political opposition, and could align public perception with what is an advancing, potentially irreversible, planetary disease. Based on recent planetary boundary assessments, we suggest the planet may already be approaching the equivalent of Stage III, though any formal staging would require expert consensus.

Keywords: Climate change; climate crisis; cancer staging; metaphor; science communication; planetary boundaries.

"I wish I had better news for you. Although we need confirmation from pathology, based on your clinical presentation, you have Stage 3 cancer".

Hearing that sentence, most adults in high-income countries would have at least a general idea of what their physician is trying to convey. First devised by Pierre Denoix in the 1940s, [1] the TNM system (tumor, node, metastases) helped harmonize cancer treatment and research protocols across countries by classifying disease severity. In the system, Stage 1 represents malignant cells that haven't invaded surrounding tissues. Stages progress up to Stage 4, where the initial cancer has metastasized to multiple sites in the body. Now in its 9th edition, [2] this system has proven itself to be a remarkably effective communication tool for most cancers.

Unlike the field of medicine, climate science has no equivalent staging system to communicate urgency and prescribe interventions. Such a framework, translating data into clear warnings, could be the difference between timely action and reaching the equivalent of Stage 4, when the window for effective action has all but closed.

A Preliminary Climate Staging Framework (Illustrative)

To minimize disruption to existing terminology while improving clarity, we propose a staging approach as an illustrative template. This draft is not a definitive classification and should be refined by an expert panel, but it shows how stages can encode progression, guide proportionate responses, and be updated transparently as indicators change. Based on current indicators, we have already progressed beyond stage I, as outlined below.

Stage	Indicative criteria (examples)	Primary communication goal	Proportionate response (examples)
Stage I	Early warning; trends worsening, but most key indicators are within the safe operating space.	Prevent progression; normalize urgency without alarmism.	Rapid mitigation, preparedness, institutional monitoring, and reporting. Note: this stage has been surpassed.
Stage II	Multiple indicators outside safe operating space; growing regional impacts and compound events.	Emphasize escalation and narrowing options.	Accelerated decarbonization; scaled adaptation; resilience investments; equity-focused risk reduction.
Stage III	Systemic involvement: multiple planetary boundaries transgressed; high-risk zones expanding; approaching tipping elements, rising regional impacts on human welfare.	Convey advanced progress and the need for a transformative response.	All Stage II actions plus emergency-scale policy coordination; large-scale ecosystem restoration; deployment of carbon dioxide removal (CDR) and solar radiation management (SRM) technologies.
Stage IV	Runaway feedback loops and/or widespread tipping points breached; persistent large-scale global impacts on human welfare.	Clarify irreversible/terminal risks and triage priorities.	All Stage III actions plus crisis governance; harm reduction; protection of life-support systems; managed retreat where needed.

Table 1. Provides an example of how a climate staging system could be operationalized using planetary-boundary status and escalating response tiers.

The Challenge of Climate Communication

Climate scientists face an array of communication hurdles. Case in point: the 1979 National Academy of Sciences assessment on CO_2 and climate change uses a series of double negatives that obscured its key point: "if carbon dioxide continues to increase, [we find] no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible." [3] 'Climate change' emerged over the following decades as a consensus label for a variety of impacts, yet 'change' itself can have neutral or even positive connotations.[4,5] We don't describe a heart attack as a 'cardiac perfusion change' or cancer as 'cellular growth change,' even though those statements are technically true. 'Climate change' implies the condition could be innocuous, concealing its pathology.

Over recent years, climate scientists and policymakers have recognized this, pivoting to the 'climate crisis' or 'climate catastrophe.' [6] 88% of IPCC authors responding to a 2021 Nature survey believed climate change was a 'crisis,' while only 6% of surveyed IPCC authors in a 2024 media survey thought the world would stay within the relative safety of 1.5°C.[7,8] Phrases like 'catastrophic' and 'dystopian' are now part of the climate lexicon.

Why Language Choices Matter More Than We Think

The shift from 'change' to 'crisis' reflects an intuitive understanding that framing shapes perception, but this intuition is backed by a substantial body of empirical evidence suggesting the effect runs deeper than most people realize.

Lakoff and Johnson's foundational work, Metaphors We Live By (1980), established that metaphorical conceptualization is not mere rhetorical ornamentation but a fundamental component of how we think.[9] More recently, empirical research has demonstrated that metaphorical framing has measurable, covert effects on decision-making. In a widely cited series of experiments, Thibodeau and Boroditsky (2011) found that framing crime as a 'virus' versus a 'beast' significantly shifted respondents' preferred policy solutions.[10] Critically, subjects did not recognize that the metaphor had influenced them. As they summarized: "the influence of the metaphorical framing effect is covert: people do not recognize metaphors as influential in their decisions; instead, they point to more 'substantive' (often numerical) information as the motivation for their problem-solving decision." The metaphor shapes the cognitive frame invisibly, priming the associated concepts and inference structures that guide judgment below conscious awareness.

This dynamic, that metaphorical framing operates tacitly yet consequentially, is precisely what makes the choice of climate language so important. The words we use to describe the crisis do not merely reflect our understanding of it; they structure the inference space through which people assess urgency, assign responsibility, and consider acceptable responses. A framework that conveys *stage* rather than mere *severity* carries different inferential weight: it implies progression, a clinical record, and a rationale for intervention proportionate to where one finds oneself on the curve.

Feeling Fine at Stage III

Oncologists often face situations where they must recommend aggressive chemotherapy or radiation treatments, with severe side effects, at moments when the patient claims they are "feeling fine". The specialist knows that 'feeling fine' is a temporary illusion based on the advanced cancer stage, while the disease marches onward towards a point of no return.

A similar scenario exists in the case of the climate crisis, at least for those who have so far avoided the most severe direct impacts. As a result of past emissions, the effects of rising global average temperatures are now 'baked into the system'. Just as the warmest part of the day isn't at noon, and the summer solstice isn't the hottest day of summer, planetary effects of climate change are just beginning to manifest. Whether it's the ocean's thermal inertia or the ice sheet lag, the roller coaster pauses–frozen in time– before the big plunge.

Your Climate Haven Is an Illusion

Big dollars now chase safe harbors. Private equity seeks climate-resilient assets; billionaires buy citizenship in places deemed safe in a warming world. Even committed environmentalists often focus exclusively on localized objectives. 'Let's save this mangrove, this coral reef, and the air quality in this region. For environmentalists, the 'think globally, act locally' instinct is not wrong per se, but it is not enough.

Just as there are no safe regions of the body in the face of metastatic illness, local bulwarks can be overrun by Earth's geophysical inertia. The jet stream connects all regions, the Atlantic Meridional Overturning Circulation affects the entire Northern Hemisphere, wildfire smoke spans continents, and the effects of La Niña and El Niño are global. New Zealand was considered one of the most climate-proof countries on the planet, yet Cyclone Gabrielle caused catastrophic flooding in 2023. The Pacific Northwest was not supposed to reach 121°F. And cascade effects go beyond geophysics: refugees, political instability, war, and pandemic risks are all part of the climate crisis sequelae.[11]

The Stages of Grief

Denial is the first stage of grief in the Kübler-Ross model, and a common response for patients receiving a devastating diagnosis.[12] Climate denial ranges from outright rejection that warming is occurring to grudging acknowledgment of the science paired with an unwillingness to take action. In clinical settings, denial is often mediated by fear. In the climate space, denial is frequently driven by short-term economic interests, political identity conflicts, or genuine confusion under a deluge of misinformation.

Modern cancer staging bypasses this obstacle by immediately conveying both the urgency and the risks inherent in treatment. No one hears 'Stage 3' and expects painless options.

Adaptive and mitigative measures such as planting trees, reflective urban surfaces, and restoring wetlands remain important, and at early stages, they might have sufficed, coupled with decarbonization. But just as advanced cancer often requires resource-intensive interventions, reversing a century of carbon accumulation requires more radical measures. Drastic emissions drawdowns, engineered approaches to carbon dioxide removal, and, in some cases, solar radiation management may need to be considered.

The core principle is straightforward: intervention carries risk, but that risk must be weighed against the risk of unchecked disease progression. Through our inaction, we are already geoengineering the planet, adding billions of tons of new CO_2 emissions each year. The question is not whether to intervene, but how deliberately and wisely to do so.

Beyond Metaphors

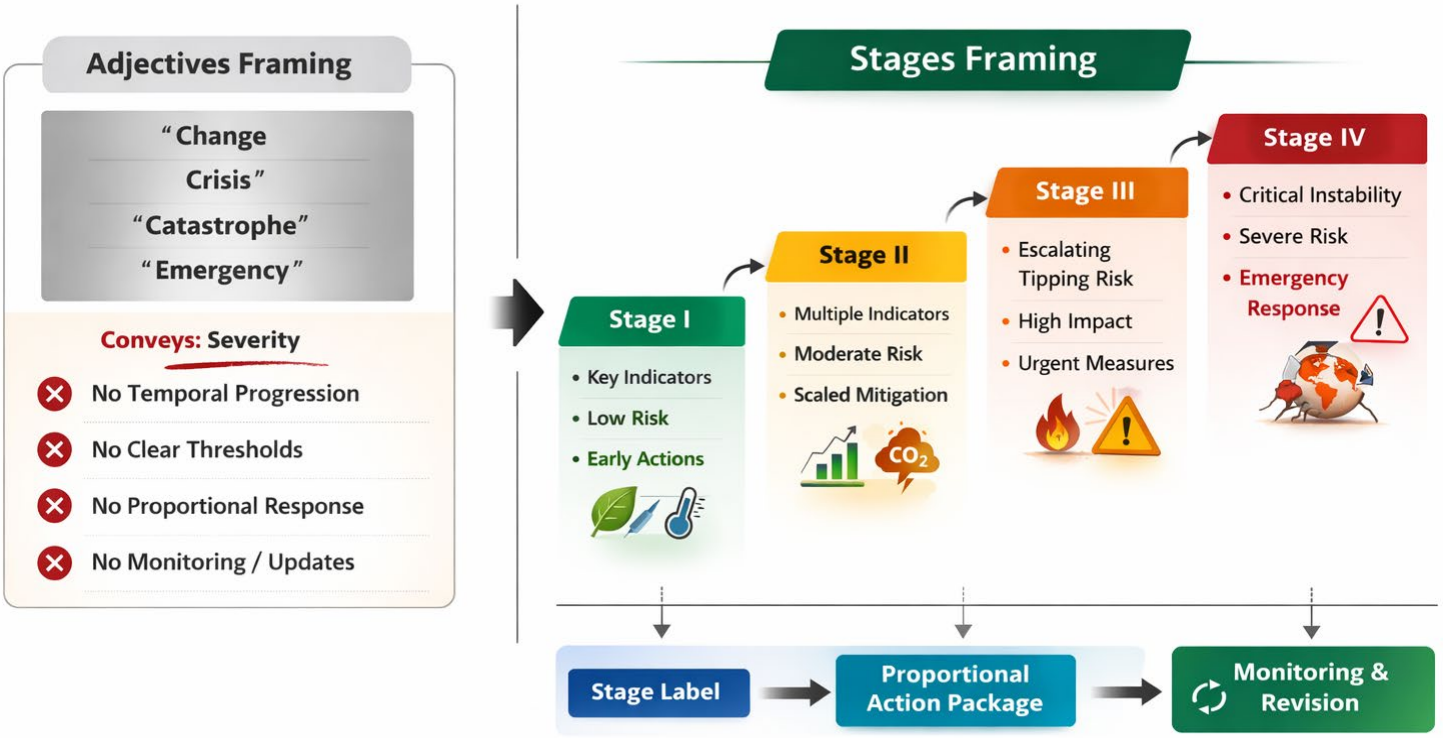

Figura 1. From adjectives to stages in climate communication. Panel A illustrates adjective-based labels (e.g., "change," "crisis," "catastrophe," "emergency") that convey perceived severity but do not encode progression, operational thresholds, proportional response guidance, or an explicit monitoring/update cycle. Panel B presents a staged framing approach (Stages I–IV) that links measurable indicators to escalating risk levels and corresponding action packages, supported by an iterative monitoring–review–update process.

While it may seem like we are describing climate change *metaphorically* (as a cancer), the reason the analogy works is that both cancer and the climate crisis involve metastatic disruption of complex adaptive systems.

Yet there are real differences. There are no survival curves for humanity at +2°C. We face the constraint of n=1 for our planet, which makes the nature of research different for climate change and cancer. Yet thousands of individual reefs, glaciers, and forests could be assessed to compile a global estimate of our stage, and a single reef can collapse within years even as the planetary system degrades over generations.

Past empirical research has demonstrated that medical analogies can be effective in communicating climate change across the political divide.[13] This is consistent with what the cognitive science of metaphor would predict: medical framing links an abstract system to something most people have direct personal experience with, and activates an inference structure consisting of *diagnose*, *treat*, and *monitor progression* that is already deeply embedded in public understanding.

Medical staging has cultural authority that is harder to suppress than the color-coded models or the arbitrary-sounding temperature intervals. The model implies progression, making the costs of inaction obvious in an immediate, personal way. An oncologist doesn't engage with a patient in denial by saying, "I understand you don't believe in cancer, but I do believe in cancer." Belief is not a part of the discussion.

It would take a scientific panel to determine exactly where the planet sits on any proposed staging scale. But with 7 of the 9 planetary boundaries exceeded as of early 2026 and with coral reefs in global die-off and ice shelves in retreat, there is clear secondary involvement.[14] If the grade reflects the most advanced aspect of the disease, we are likely at Stage III.

No one wants to hear they must consider a mastectomy, radiation, or toxic chemotherapy. And for climate change and many cases of cancer, perhaps some of these outcomes can still be avoided. But we are well beyond the point where a good diet and exercise will do the trick.

There is no shortage of urgent priorities in the climate response, and revising the language of climate communication is not among the most obvious. But at the same time, it is not costly and faces no ready political opposition. Altering how we talk about the climate may seem marginal compared to decarbonizing industry or transforming energy systems. Yet cognitive science is clear that framing operates below conscious awareness, shaping what feels urgent and worth acting on. For a crisis that has struggled, for decades, to generate a response proportionate to its severity, that is not a trivial finding. If the way we describe a disease determines whether patients seek treatment, the answer to the same question about societies' response to our planet may matter more than we think.

CONCLUSIONS

To our knowledge, no widely adopted, consensus-based staging nomenclature currently exists for communicating climate status; we propose staging as a practical complement to existing scenario- and risk-based frameworks. Moving from adjectives to stages is a low-cost, high-leverage upgrade in climate communication: it can translate complex Earth-system signals into an interpretable progression, reduce ambiguity about "how far along we are," and better align public expectations with proportional policy and societal responses. While any formal staging system would require transparent criteria, periodic review, and expert consensus, adopting the staging logic now offers a pragmatic route to improve clarity, accountability, and decision-readiness for decisive action in an era where time and intervention windows are narrowing.

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