A Psychological Perspective of Climate Change

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ABSTRACT

Climate change is a global challenge with different regions experiencing adverse weather events like heat waves, floods, and droughts. While natural phenomena like solar activity and volcanic eruptions contribute to climate change, current trends are largely driven by human activities In the quest to improve living standards and cater to the needs of a growing population, human beings engage in activities that emit greenhouse gases disrupting atmospheric composition and weather patterns. These activities include the burning of fossil fuels, deforestation, and overgrazing. Conversely, humans can modify their behavior to promote positive environmental outcomes. From a psychological perspective, human behavior is influenced by different factors that may be conscious or unconscious. This review explores psychological concepts that explain why humans engage in activities that contribute to climate change and suggests psychological approaches to promote behavior change. Information from the environment is perceived through the senses and processed to create meaning. Perception enables humans to process and evaluate information received from the environment, influencing decision-making and action. The interpretation empowers the mind to assess the relevance of the information, which is consequently stored in the long-term memory or dismissed. Cognitive processes, including motivation and attitude, are crucial in determining the vigor with which activities are undertaken. Human-induced climate change can be understood as a product of these psychological processes. This article explains how cognition, perception, and motivation underpin the human behaviors linked to climate change and how attitude changes can foster positive environmental practices. A holistic approach to climate change mitigation is recommended.

Key words: climate change, cognition, perception, motivation, attitude, behavior change.

INTRODUCTION

Climate change refers to long-term shifts of atmospheric conditions, particularly temperatures, and precipitation. According to a 2024 United Nations report, the earth's average temperature is 1.2^0c warmer than in 1800, with the last decade recording the highest temperatures. The report further acknowledges that although natural factors like solar and volcanic activities can cause climate change, human activities have been the predominant cause in recent decades. Burning of fossil fuels, such as coal and gas, emits greenhouse gases that significantly raise atmospheric temperatures.

The Intergovernmental Panel on Climate Change (IPCC ,2022) asserts that human activities are the primary drivers of climate change correlating with increased adverse weather events. Industrialized countries contribute to the most greenhouse gas emissions, while practices like deforestation, overuse of fertilizers, piling of agricultural waste, and overgrazing are also prevalent in less-developed countries. Studies reveal that climate stabilization is possible if humans halt behaviors causing climate change.

Psychologists argue that both conscious and unconscious factors influence human behavior. This review explores selected psychological concepts- cognition, perception, and motivation—and their implications for human activities and climate change.

Cognition

Cognition encompasses all mental processes involved in acquiring and processing knowledge. Jean Piaget(1896-1980) a cognitive psychologist, posited that human beings do not merely respond to stimuli but actively

assimilate new information with prior knowledge NSCC, (2021). The information-processing approach further explains cognition as a step-by-step process involving thinking, remembering, and learning complex information (Atkinson & Shiffrin, 1968).

According to Meyers (2013) information is received through the senses and processed in three memory stages: sensory memory, short-term memory, and long-term memory. Relevant information is retained and used for decision-making, while irrelevant data is discarded. Cognitive processes thus shape human behavior, as decisions and actions are influenced by the knowledge an individual possesses. For example, a person's perception of climate risks, such as rising temperatures or frequent flooding, directly impacts their willingness to adopt environmentally friendly practices (Clayton et al., 2015). Additionally, Gifford, (2011), postulates that cognitive biases, such as the availability heuristic, where individuals assess the likelihood of events based on readily available information can either heighten or diminish the perceived urgency of climate change.

In the context of climate change, human activities such as industrial emissions and agricultural practices are informed by varying levels of knowledge. For instance, fertilizers release nitrous oxide, and methane emissions stem from fossil fuel production, landfills, and livestock. These gases have a more significant impact on Earth's temperature than carbon dioxide (Gale, 2018). Moreover, industrial processes emit synthetic gases like hydrofluorocarbons (HFCs), which are thousands of times more potent than carbon dioxide.

Despite widespread information on climate change, harmful practices persist, raising questions about the accessibility and impact of such knowledge. For example, do drivers of trucks emitting carbon monoxide understand the environmental damage caused? Are charcoal burners aware of the link between deforestation and prolonged droughts? Effective climate change mitigation requires a clear understanding of the chain of events—from human activities like deforestation to long-term consequences such as droughts and consequently food insecurity. Continued human activities that cause climate change can be explained from various viewpoints. According to Cameron et al (2021) damaging behaviors are caused by ignorance of facts. This idea is supported by a study by Duckworth et al, (2020) which states that we may fail to make desirable changes due to lack of the requisite information. Furthermore, the study affirms the model of behavior change that declares that individuals exist in objective situations, responding to features that attract their attention and are subject to appraisal. For instance, recalling the effects of a severe drought might motivate someone to conserve water. However, decision-making is often influenced by cognitive limitations, such as information overload, where the abundance of data on climate change overwhelms individuals, leading to inaction (Stoknes, 2015).

Perception

Perception refers to the organization, interpretation, and conscious experience of sensory information. It shapes how individuals interact with their environment and is influenced by past experiences, expectations, and the nature of stimuli (Spielman et al., 2020). For instance, a person unaware of carbon monoxide's dangers may perceive truck emissions as harmless.

Cultural contexts also influence perception. Different communities prioritize certain economic activities, which may conflict with environmental conservation. For example, pastoralist communities view large herds of cattle as symbols of wealth, even if overgrazing contributes to vegetation loss and climate hazards. Similarly, agricultural communities value crop cultivation, often at the expense of forest conservation.

Mitigating climate change requires altering perceptions through education and awareness. Arlinghaus et al. (2017) emphasize the role of education in fostering self-awareness and skills for behavior change. A study in Nepal revealed that some individuals perceived climate change as a media narrative or divine punishment, requiring spiritual rather than scientific solutions (Becken et al., 2013). Such findings underscore the need for culturally sensitive approaches to climate action (Petrescu-Mag, 2022).

Motivation

Motivation drives human behavior, stemming from intrinsic factors (internal satisfaction) or extrinsic factors (external rewards). Intrinsically motivated behaviors, such as innovation, often lead to technological

advancements. However, extrinsic rewards, like economic gains, can exacerbate climate change by encouraging industrial growth and waste mismanagement. Motivated behavior is driven towards a goal and it is terminated when a goal is achieved Meyers (2013). Motivation clearly explains why human beings engage in activities that cause climate change. Innovations of modern machinery are credited to intrinsically motivated researchers. They have a strong desire in themselves to come up with something better or to prove something. When the machines and other technology are put in place they elicit the idea of their benefit. The enormous benefit of using modern machinery and technology escalates extrinsic motivation. The great demand for manufactured products contributes to the growth of the number of industries especially in the developceed world.

When individuals are motivated by convenience, economic gains, or societal expectations, they may prioritize short-term benefits over long-term environmental sustainability. According to Stoknes (2020), the desire for efficient transportation often leads to reliance on fossil fuel-powered vehicles, consequently contributing to greenhouse gas emissions.

Mokku (2023) states that developed countries are responsible for climate change because of the greenhouse gases emitted to the atmosphere from the industries. Similarly, consumerism driven by materialistic motivation promotes overproduction and waste, exacerbating resource depletion and environmental degradation (Clayton et al., 2022).

Industries prioritize profit over environmental management, emitting harmful greenhouse gases like methane during waste decomposition (NEET, 2022). Yet, environmental discomfort can motivate change, as people value their health and surroundings (Cameron et al., 2021)..

On the other hand, intrinsic motivation which arises from personal values and a sense of responsibility can also inspire individuals to engage in sustainable practices such as waste management or energy conservation as described by Deci & Ryan, (2020). Motivation therefore drives the initiation and the persistence of behaviors, making it a critical factor in addressing climate change.

According to Fredrick *et al* (2021) many global climate policies are not adhered to because mitigating climate involves economic costs which will yield results in the future. Implementing these policies may be subject to the motives of each government. Cameron (2021) argues that some behaviors have social motives and suggests that there is a need for research on how behavior with environmental consequences, serves core social motives.

Motivating climate-friendly behavior requires aligning mitigation efforts with individuals' values. For instance, framing climate action as promoting economic opportunities and community well-being can inspire greater public engagement (Trapnell, 2015).

Therefore, the approach needs to change from trying to convince people to care about climate change and focus on the aspect that climate change mitigation produces the benefits that they care about. Reducing pollution can be pegged to promoting new economic opportunities and helping us see ourselves as people who care about one another and the planet. The belief that climate mitigation promotes a more caring community and economic development benefits were cited as motivators.

Governments and organizations can also incentivize sustainable practices through tax rebates, rewards, or recognition for environmentally conscious actions (Yuxia et al., 2022). Since, external rewards significantly motivate human behavior, recognition and rewarding of human activities that mitigate climate change can encourage individuals to adopt sustainable practices. Governments and organizations can implement various incentives such as: Issuing credits to individuals or communities for reducing their carbon footprint or engaging in climate-friendly activities. Offering discounts, free products, or services to individuals who participate in eco-friendly activities, like recycling or using public transportation. Providing tax breaks or rebates to individuals or businesses that invest in renewable energy or adopt sustainable practices. Honoring individuals or communities that make significant contributions to environmental conservation through local awards or ceremonies.

ATTITUDE ALTERATION FOR CLIMATE CHANGE MITIGATION

Attitude is the evaluation of a person, idea, or event in a favorable or unfavorable manner. Attitudes have

cognitive, affective and behavioral component. The cognitive component includes knowledge and beliefs one has about the attitudinal object. Affective component are the feelings and consequently a combination of the two leads to a behavior or action (Kendra , 2024). Therefore, attitude is a significant determinant of human behavior and cannot be ignored in climate change mitigation where human activity is paramount.

According to Kendra (2024), attitudes are acquired gradually, through experience, social roles and norms, observing others and conditioning. In relation to climate change mitigation, people must have a positive attitude towards activities that reduce emission of green-house gases in the atmosphere.

Attitudes, shaped by knowledge, emotions, and behaviors, influence human actions. Positive attitudes toward climate mitigation can drive changes in practices that reduce greenhouse gas emissions. Effective communication and education are essential for fostering such attitudes.

For example, Kenya's Competency-Based Curriculum incorporates climate change education to instill positive attitudes and behaviors in learners (KICD, 2024). Local, grassroots initiatives also play a crucial role in climate action, as highlighted by Tosun (2022).

A study carried out in Finland on students' attitudes to climate change revealed that the group that visited the exhibition on climate mitigation and later had follow-up classes on the same showed a decreased intent to act against climate change compared to the group that only experienced the exhibition Gorr (2014). Therefore, for people to have a positive attitude to climate change mitigation and engage in non-destructive activities, there is need to expose them to relevant information and continue teaching them until they change their attitude and behavior.

Anand (2023) states that governments have come up with sustainable agriculture policies like restricting the over-application of fertilizers, improving pasture, increasing animal productivity and enhancing manure management. But the biggest challenge is how to entice millions of farmers across the world to uniformly adopt sustainable agricultural practices as soon as possible. This is where the governments will have to be firm in their climate commitments. Credibility and the consistence of the leaders is essential in convincing the farmers to change their practices. According to Kamkale (2010), the credibility of the communicator determines the reaction of the audience. Therefore, matters climate change should be addressed by leaders with expertise and authenticity**.**

CONCLUSION

Climate change is intricately linked to human behavior, shaped by cognitive processes, perceptions, motivations, and attitudes. Understanding these psychological factors is essential for designing effective interventions. Governments, educators, and organizations must adopt holistic, culturally sensitive, and motivational strategies to inspire sustainable behaviors and mitigate climate change.

RECOMMENDATION

The challenge of climate change should be perceived beyond a geographical dimension. Human behavior is determined by all dimensions of life including spiritual, economical, psychological, social, physiological and educational. A holistic approach to mitigating climate change would yield better results.

REFERENCES

1. Anand, A. (2023). Agriculture, energy transition: How agriculture is exacerbating global warming**.** Retrieved from https://www.spglobal.com/commodityinsights/en/market-insights/blogs/agriculture/071323-how-agriculture-is-exacerbating-climate-conditions
2. Arlinghaus, K. R., & Johnston, C. A. (2017). Advocating for behavior change with education. *American* Journal of Lifestyle Medicine*, 12*(2), 113–116. https://doi.org/10.1177/1559827617745479
3. Becken, S., Lama, A. K., & Espiner, S. (2013). The cultural context of climate change impacts: Perceptions among community members in the Annapurna Conservation Area, Nepal. Environmental Development, 8, 22–37. https://doi.org/10.1016/j.envdev.2013.05.007

4. Cameron, B., Anna, B., & Lorraine, W. (2021). Motivation and climate change: A review. Current Opinion in Psychology, 42, 82–88. https://doi.org/10.1016/j.copsyc.2021.04.001
5. Clayton, S., Manning, C. M., & Hodge, C. (2022). Beyond Storms & Droughts: The Psychological Impacts of Climate Change. American Psychological Association.
6. Deci, E. L., & Ryan, R. M. (2020). Intrinsic Motivation and Self-Determination in Human Behavior. Springer.
7. Duckworth, A. L., & Gross, J. J. (2020). Behavior change. Organizational Behavior and Human Decision Processes, 161(Suppl), 39–49. https://doi.org/10.1016/j.obhdp.2020.09.002
8. Gale. (2018). Climate change and global warming**.** Retrieved from https://www.gale.com/intl/databases-explored/social-issues/global-warming
9. Gifford, R. (2021). The Dragons of Inaction: Psychological Barriers That Limit Climate Change Mitigation and Adaptation. American Psychologist, 66(4), 290-302.
10. Gifford, R. (2011). The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation. American Psychologist, 66(4), 290–302. https://doi.org/10.1037/a0023566
11. Gorr, C. (2014). Changing climate, changing attitude? *Museums & Social Issues, 9*(2), 94–108. https://doi.org/10.1179/1559689314Z.00000000021
12. Intergovernmental Panel on Climate Change (IPCC). (2022). Climate change 2021: Summary for all**.** Version 3 - 12 December 2022. Retrieved from https://www.ipcc.ch/report/ar6/wg1/downloads/outreach/IPCC_AR6_WGI_SummaryForAll.pdf
13. Cherry, K. (2024). The components of attitudes**.** Retrieved from https://www.verywellmind.com/attitudes-how-they-form-change-shape-behavior-2795897
14. Kenya Institute of Curriculum Development (KICD). (2024). KICD rationalized curriculum designs for CBC Grade 1 to 9. Retrieved from https://cbc.co.ke/kicd-rationalized-curriculum-designs-for-cbc-grade-1-to-9/
15. Kumkale, G. T., Albarracín, D., & Seignourel, P. J. (2010). The effects of source credibility in the presence or absence of prior attitudes: Implications for the design of persuasive communication campaigns. Journal of Applied Social Psychology, 40(6), 1325–1356. https://doi.org/10.1111/j.1559-1816.2010.00620.x
16. Meyers, D. G. (2013). Psychology (10th ed.). New York, NY: Worth Publishers.
17. Jarso, M. (2023, January). Climate change destroys the livelihoods of Kenyan pastoralists. Africa Renewal. Retrieved from https://www.un.org/africarenewal/section/sustainable-development-goals
18. NSCC. (2021). Life span development: Behavioral and cognitive theories**.** Retrieved from https://pressbooks.nscc.ca/lumenlife/chapter/behavioral-and-cognitive-theories/
19. NEET. (2022). Impact of industrial waste on the environment**.** Retrieved from https://unacademy.com/content/neet-ug/study-material/chemistry/impact-of-industrial-waste-on-environment/
20. Spielman, R. M., Jenkins, W. J., & Lovett, M. D. (2020). Psychology 2e. OpenStax. Retrieved from https://assets.openstax.org/oscms-prodcms/media/documents/Psychology2e_WEB.pdf
21. Stoknes, P. E. (2020). What We Think About When We Try Not to Think About Global Warming: Toward a New Psychology of Climate Action. Chelsea Green Publishing
22. Tosun, J. (2022). Addressing climate change through climate action. *Climate Action, 1,* 1. https://doi.org/10.1007/s44168-022-00003-8
23. Trapnell, R. (2015). New ways to motivate climate change action around the world. Retrieved from https://phys.org/news/2015-09-ways-climate-action-world.html
24. United Nations. (2024). Climate action**.** Retrieved from https://www.un.org/en/climatechange/what-is-climate-change
25. Liu, Y., Yang, Y., Bai, X., & Chen, Y. (2022). Do immediate external rewards really enhance intrinsic motivation? Frontiers in Psychology*, 13*. https://doi.org/10.3389/fpsyg.2022.853879