

Transitivity and Urgency in UNEP's COP28 Climate Discourse: A Systemic Functional Analysis of Grammatical Metaphor

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Abstract

To respond to the climate crisis, it is not enough to produce scientific evidence; the way climate action is written and spoken about also shapes how urgent and unavoidable it feels. In this study we analyse the official COP28 Production Gap Report 2023 book, treating it as a key example of UNEP's climate discourse. Using a Systemic Functional Linguistics approach, we clause-coded

the entire report for process types, participant roles, circumstantial elements and four kinds of grammatical metaphor (nominalisation, verbalisation, adverbialisation and rank-shifting). The analysis shows that relational and material processes work together to present climate change both as a fixed state of affairs and as an unfolding course of action. Carriers and Actors are the most frequent participant roles, while purpose-, location-, manner- and time-related circumstances repeatedly tie actions to specific goals, places and deadlines such as “by 2030”. Dense patterns of nominalisation and adverbialisation, often combined with rank-shifting, compress long causal chains into compact targets and pathways, and distribute agency across governments, sectors and abstract entities like “systems” or “trajectories”. Taken together, these linguistic resources create an “action grammar of urgency” that makes rapid transition appear necessary, time-bound and administratively manageable. The findings highlight how the language of the COP28 book itself can support more persuasive and responsible climate communication, and offer practical cues for policymakers and authors who draft similar reports.

Keywords: Systemic Functional Linguistics, transitivity, grammatical metaphor, UNEP, COP28, climate discourse, urgency, climate communication, agency, environmental governance.

1.Introduction

The global climate crisis has culminated to a point whereby scientific warnings are experienced, not just prognostications. Extreme weather, biodiversity loss, and harm to health are increasingly showing that, due to rising emissions of greenhouse gases, conditions to sustain human and ecological life are changing (Lee et al., 2023; Vohra et al., 2021). In this regard, there is a key role for the United Nations Environment Programme (UNEP) in international climate governance, as the organization is able to act as a concern – increasingly as a scientific concern – and as a discursive actor or agent that situates climate change as urgent, inescapable, and in need of consensual collective action. Further, at COP28, UNEP's language found in UNEP reports, urgent statements, and speeches, function as not just a way to communicate, but also act as a strategic mode of persuasion, and also as a mobilizing mechanism for governments and concerned public to act and commits(Asayama, 2021; Fløttum, 2010; Fløttum & Dahl, 2012)

The urgency is constructed within the COP28 discourse as in the statement that narrates that, with global carbon dioxide (CO₂) emissions of which nearly 90% are caused by fossil fuels maintained

with the current rate, the world may use up remaining emissions budgets in line with a 50% chance of limiting long-term warming to 1.5 °C by 2030 (Lamboll et al., 2023). This framing transforms scientific probabilities into existential thresholds, which further underpins the fact that the action taken on climate should be urgent to prevent disastrous consequences. Likewise, the statement that in 2030, the governments are still set to increase the volume of fossil fuels more than twice than the quantity that would be available if they were to restrict the warming to 1.5 °C is used to highlight the fact that there is a disconnect between the political intentions and the scientific requirement (McGlade & Ekins, 2015; Welsby et al., 2021). These are neither linguistically neutral; they apply certain grammatical resources which make them urgent and blameful.

The words in such writings do not simply recount the dangers of climate, but they make it happen. The UNEP appeals to material processes by arguing that phasing out fossil fuels is a collective issue that governments must act upon in cooperation, making governments responsible agents or agents of change. Grammatical metaphors like the production gap, transition capacity, and a carbon lock-in are seen to change abstract constraints into actors in the real world with agency. In such a manner, the discourse of UNEP spreads the responsibility on various levels between governments and institutions and metaphors, putting the crisis as a case of urgency and inevitability. It shows how Systemic Functional Linguistics (SFL), specifically the study of transitivity and grammatical metaphor, can help deconstruct the process of language constructs (Halliday & Matthiessen, 2014; Hart & Feldman, 2016; Spence & Pidgeon, 2010).

This review paper seeks to address this gap by analyzing UNEP's COP28 climate discourse through the lens of SFL. By focusing on urgent statements, the paper will explore how transitivity processes and grammatical metaphors combine to create a discourse of inevitability, distribute agency across actors, and frame climate action as a moral and political imperative.

Accordingly, the paper is guided by two research questions:

1. How does UNEP-affiliated COP28 discourse employ transitivity (Processes, Participants, Circumstances) to represent agency and construct urgency in the wake of the Global Stocktake (GST)?

2. How do grammatical metaphors of transitivity specifically nominalization and rank-shifting transform abstract climate challenges into agentive entities, and how does this intensify perceptions of urgency?

2. Literature Review

2.1 Systemic Functional Linguistics: Metafunctions, Transitivity, and Grammatical Metaphor

Systemic Functional Linguistics (SFL), developed by M.A.K. Halliday, provides a framework for understanding how language functions as a resource for meaning-making in social contexts. Unlike structuralist linguistics, which focuses on the rules governing sentence construction, SFL views language as a tool for communication and meaning creation. Central to SFL are three metafunctions that represent different aspects of meaning: the **ideational metafunction**, the **interpersonal metafunction**, and the **textual metafunction** (Halliday, 1994).

The **ideational metafunction** is the most relevant to the analysis of climate discourse, as it deals with how language represents experience, processes, and participants. It enables us to understand how actions and events are framed in a given text. Within this metafunction, the **transitivity system** categorizes processes into six types: **material** (doing), **mental** (thinking/feeling), **relational** (being/having), **verbal** (saying), **existential** (existing), and **behavioral** (acting) (Halliday & Matthiessen, 2014). Each process type frames responsibility and agency in different ways, making it a powerful tool for understanding how climate issues are communicated, and who is positioned as responsible for climate action.

Other than transitivity, the other significant aspect of the ideational metafunction is the grammatical metaphor. Grammatical metaphor is the transformation of processes and qualities into abstract items that act as participants of a clause (Halliday & Matthiessen, 2014). Reification of abstract concepts (despite the existence of abstract experience in grammatical metaphor) is expressed through nominalisation (i.e. changing actions (verbs) and qualities (adjectives) into nouns) that offer a more extreme sense of materiality. Indicatively, instead of uttering that countries should and need to reduce emissions, climate change discourse tends to put the reduction of emissions into an abstract goal or objective. The relevant point of these changes through

grammatical metaphor is that the changes at once reduce the complexity into the form of a single noun and increase urgency because the previously abstract processes are now converted into things to be done (Taverniers, 2006).

SFL can be used as an adequate framework for analysing the UNEP COP28 discourse. Unep linguistics can be analysed through the structures of transitivity and grammatical metaphors to understand how a sense of urgency and delegation of roles and responsibilities are created in the language of UNEP. To this end, SFL offers a helpful perspective for processing climate change as an emergency that must occur.

2.2 Climate Discourse Analysis Using SFL

Applying Systemic Functional Linguistics (SFL) to climate discourse has determined how language has contributed to the construction of climate change, and how the urgency is constructed concerning climate change concerns. SFL has helped demystify the agency/responsibility allocation in climate talks, particularly, but not necessarily, institutional discourse by the UNFCCC or UNEP. As an illustration, through the study of transitivity processes, it has been shown that climate change and issues that uphold it are modelled as dynamic forces that do not belong to human agency, permitting the decrease of accountability.

Shaw (2016) carried out a comprehensive examination into the climate discourse found in the United Nations, revealing how transitivity processes tend to displace action from specific agents and replace them with various abstractions, e.g., “warming,” “emissions,” etc. Shaw’s research demonstrates how these metaphors obscure who the nations are who contribute toward the climate crisis yet simultaneously call for rapid, concentrated, and significant global action. Critical to the ongoing discussion of climate change as a continuation of it as an effect evidenced through material processes (doing) and relational processes (being) in many climate texts presents climate change as a natural event that will continue rather than a problem produced by one or more actors. (Shaw, 2016).

Fløttum et al. (2016) examined the discursive strategies in the international climate texts. They expounded on the functions of transitivity and grammatical metaphors in framing climate change as a problem on a global scale (Fløttum et al., 2016). In keeping with other directions of

investigation, in collective pronouns, like we or our, or unless we are discussing some abstract agent, like the world or the environment, discourse strategies play the role of universalizing responsibility. These discourse strategies facilitate the collective agency among the actors in the political contexts because no one country can be expected to bear complete responsibility for climate change. Discussed the construction of climate change; consequently, they also found transitivity and modality in constituting climate change as a moral duty. In their research on climate change, Spence and Pidgeon (2010) pointed out that the modal verbs used (e.g., must and should) bring a moral obligation of governments to take action and soon. Besides the moral framing of climate change, which is reported through grammatical metaphors, the authors emphasize that the connections that create even greater urgency and force of action in the political arenas (Spence & Pidgeon, 2010).

Additionally, the article by Dryzek and Lo (2015) reminds the reader that climate change is not only a scientific problem, but a political one. Their examination of the climate change discussion shows how the grammatical metaphor, especially the terminology, carbon lock-in, and tipping points, humanize the climate limitations to appear influential and forceful (Dryzek & Lo, 2015). The grammatical metaphor is decisive in building the climate change narrative, without being a threat. However, a logical conclusion of the previous process is that it needs immediate and collective action.

Although these articles demonstrate how transitivity and grammatical metaphor are also relevant to the framing of climate change, they also provide a gap in the literature: most of the studies have looked at either transitivity (the content agencies) or grammatical metaphor, individually or alone. This paper bridges that gap by combining both analytical tools (transitivity and grammatical metaphor) to give a more detailed account of how urgency and responsibility are made in each of the discourses of UNEP COP28.

2.3 Grammatical Metaphor in Climate Discourse

The role of grammatical metaphor in constituting climate speech is foremost, particularly regarding setting the urgency of climate action and the inevitability of climate action. According to Halliday and Matthiessen (2014), grammatical metaphor entails the application of grammatical processes and qualities, which have been objectified into an abstract form that can be discussed as

a participant or an entity in a conversation (Halliday & Matthiessen, 2014). This conversion has been especially successful in communicating climate change, in which the complex processes of the environment are reduced to real, agentic powers requiring immediate action.

According to transitive metaphors, nominalization is among the more common groupings of grammatical metaphors, which occurs in climate discourse, altering verb-qualities into grammatical nouns. Shifting to nominalization is an effective grammatical shift of climatic predicaments, since it increases the sense of urgency about climate action. In other words, by meaning the process of carbon reduction or decarbonization, the UNEP nominalizes these climate challenges into processes into goals such that an abstract climate change challenge is indicated in a quantifiable way. Grammatical metaphor allows complex actions and actions to be simplified, so that the processes will be presented so that something can be done with it, something controlled, or being controlled with respect to quantifiable results. Likewise, constructed rank-shifting establishes a sense of inevitability because these climate crises are presented as already underway, which forms an implicit presumption that an action is not only to be considered but also urgent in the general sense. Nominalization, also known as rank-shifting, allows an abstract action to be objectified so that it can be treated more like an entity to seem more rigid and assigned to the agenda.

An example is to put the action of reducing emissions in context, one might occasionally call it an act of emission reduction, and then one would have to interpret a continuous action as a one-time specific goal. The reification of these processes (captured in 3D) establishes a sense of urgency as it puts these abstract challenges into frames that can be measured, acted upon, and governed (Taverniers, 2006). Nominalization Dynamic processes have thus become unyielding forces, terminologies such as carbon lock-in or production gap are some of the most outstanding examples of nominalization in climate discourse (Seto et al., 2016).

An essential element of the climate discourse is adverbialization, which is also considered a category of grammatical metaphor and creates urgency within time and space. UNEP creates an urgency of action by incorporating both time (as in, by 2030, within this decade, etc.) and place (in every corner of the planet, etc.), a kind of urgency. However, most importantly, time and place contextualize characteristics of climate change. However, more importantly, they offer urgency in

scenarios with two limited time frames, so there is no time to lose to global action. Temporal adverbs such as by 2030 also establish the circumscribed nature of time and the closure of time in which one should act, as well as emphasizing and framing climate change as a time frame crisis in discourse as urgent.

Another type of grammatical metaphor is verbalization which is also a strategic option of the grammatical metaphor in increasing urgency when addressing climate discourse which leads to the need to take action. The fact that UNEP transforms nouns (decarbonization) to verbs (decarbonize) constructs the necessity of proactive involvement. It shows that climate change is not a concern for the future but a challenge that should be addressed. Moreover, verbalization creates urgency to the action taken and moves the focus to what needs to be done instead of what is.

Rank-shifting in clauses is an important process in the discourse of climax. When justifications or reasons to act on climate, or conditions to act on climate, are rank-shifted or embedded in relative clauses or infinitive clauses, a thick stratum of complicated clause structure is formed. The motives behind the action of climate are presented in the composition of the clauses as they occur concurrently with any action. Rank-shifting implies that climate action is not only an urgent but also an inevitable situation. It involves confounding the cause and effect and the explanation emphasizes the direness of climate disaster.

Metaphorical grammar thus serves multiple functions in climate discourse: it affords the transition from abstract, intangible to concrete force; it affords the sense of urgency temporally and spatially; it affords attention to action, not description. In using these metaphors, UNEP builds a discourse that represents climate change as both an urgent crisis as well as an inevitable outcome of past decisions, with solutions representing administratively possible action in established timeframes. As shown in Figure 1 (A), nominalization is the dominant grammatical metaphor, reflecting a tendency in UNEP's COP28 discourse to transform abstract actions into measurable targets. Similarly, circumstantial elements in Figure 1 (C) highlight the prominent use of Purpose, Location, Manner, and Time markers, suggesting an emphasis on what transitions are for, where and how they will unfold, and the shrinking temporal window for response.

2.4 Gap in Literature

Although scholars such as Shaw (2016), Fløttum and others (2016), or Spence and Pidgeon (2010) have made important contributions to discussing transitivity and grammatical metaphor in a specific context, i.e., climate discourse, the interaction between the two tools in the same institutional framework is still underresearched. Most of the research involves the study of transitivity to learn about the distribution of responsibility and agency (Shaw, 2016) or examines grammatical metaphors separately (Seto et al., 2016). Although these strategies have clarified the personal processes of urgency and responsibility in climate communication, they lack a comprehensive picture of how these linguistic strategies intersect to form a discourse of urgency.

Moreover, although the role of grammatical metaphors, nominalization, and adverbialization in the framing of climate urgency has been examined (Fløttum, 2010), there is a lack of research on how such metaphors, in conjunction with transitivity, are constructed to create a convincing and politically sensitive narrative in institutional texts, including UNEP reports on COP28. This paper has attempted to address this gap by critically examining the COP28 discussion of UNEP through the prism of transitivity and grammatical metaphor. In that way, it will reveal how language is employed to present not only climate change but also frame it as an urgent, inevitable, and actionable threat.

3. Methodology

3.1 Theoretical Framework

The frameworks of transitivity and grammatical metaphor together provide a robust theoretical foundation for addressing the research questions, which focus on how UNEP constructs urgency and distributes agency in its COP28 discourse.

3.2 Corpus

The corpus centers on the Production Gap Report 2023 co-published by SEI, Climate Analytics, E3G, IISD, and UNEP released in the COP28 policy window; we analyze it as representative of UNEP-affiliated institutional discourse at COP28 (McGlade & Ekins, 2015; Welsby et al., 2021), including a clause-level coding file (processes, participants, circumstances) and a frequency summary file (category tallies). We analyze the Production Gap Report 2023 (PGR2023) in full and treat it as representative of UNEP-affiliated institutional discourse at COP28, compiling a clause-level coding file (processes, participant roles, circumstances) and a frequency summary file

(category tallies). A clause-coded dataset compiled from the report, Corpus A (PGR2023 transitivity-coded clauses; N = 3,136), provides the transitivity profile (processes, participant roles, and circumstantial elements) and the denominator for all clause-normalized grammatical-metaphor rates. These files provided the qualitative material for linguistic interpretation and the quantitative counts necessary for identifying dominant patterns. (SEI et al., 2023).

A discourse-analysis worksheet was also created by us mapping the excerpts to SFL categories (processes, participants, circumstances and urgency frames). Lastly, the validation and triangulation of findings were made through three derivative coding sheets, the roles of the key participants, and the situations; the authors were able to aggregate all the findings of the precise Production Gap text. These provided systematic classifications of the core elements of transitivity, ensuring replicability and consistency in the coding process.

3.3 Coding Process

The analysis process was carried out in several steps, adhering to the SFL's methodology principles. First, all the clauses of the curated urgent-statement excerpts (as of SEI et al., 2023) were broken and grouped by process type. This entailed whether a material process of action, a relational process of attribution, an existential process of existence, or some other type of process was used in a particular clause.

The second step was to determine the participants and their roles and coded them using the categories suggested in SFL: Actor, Goal, Carrier, Phenomenon, and Senser (BIBER & FINEGAN, 1989). The participants in these classifications were written out in the participant-role coding sheet of the authors (based on the same source). This analytical layer showed the patterns of UNEP's distribution of responsibility among human and non-human actors. When we say climate change's effects are also on the ground and causing havoc, we place the effects as the Actor and agency in the abstract phenomena, as opposed to human decision-makers.

The circumstances were entered into the circumstance-coding sheet of the authors (based on the same source). They had time indicators, like by 2030, or conditional words with limited capacities (McCauley & Heffron, 2018). This phase was important in determining how UNEP constructed urgency around time, using deadlines such as 2030 and 2050 to create a sense of opportunity running out, and how it constructed equity through the conditions of capacity and facilitation.

After the coding process was over, we tabulated counts with our frequency summary sheet (tabulated in the actual Production Gap text), which summarized frequencies. This made it possible to quantify patterns, e.g., the prevalence of material processes or the frequency of being placed as Actors of abstract entities. The quantitative results presented gave a structural context that underpinned and framed the qualitative discourse analysis.

All clauses where an abstract concept was reified to an Actor were identified as a grammatical metaphor. As an illustration, the gap is the one that confines the outcomes of unsustainable fossil fuel production: this gap locks in unsustainable levels of fossil fuel production. These cases were also cross-linked with signs of urgency like modality (must, should) and inevitability (inevitable, essential), and health outcomes (leads to premature deaths). Transitivity coding and metaphor identification were the methods used to encode the study to reflect the linguistic dramatization of urgency; for grammatical metaphor (nominalization *v*, verbalization *a*, adverbialization, rank-shifting) we report **occurrences per 100 clauses**, and for transitivity we report the **percentage share of each process type, participant role, and circumstantial category in the token counts** drawn from Corpus A.

3.4 Reliability and Validity

Reliability was established by coding iteratively and checking across the three different outputs. Each clause was compared against the three specific files (Process Types, Primary Participant Roles, and Circumstances), to ensure consistency of coding (Lacy et al., 2015; Lombard et al., 2006). In conjunction with the quantitative summaries based on the author's frequency summary sheet (which were taken from SEI et al., 2023), triangulation of findings and identification of dominant trends were confirmed by demonstrating the analytical interpretations derived from analysis of the text and the numerical distribution summaries coded through the frequency description (Hayes & Krippendorff, 2007).

4. Analysis and Discussion

4.1 Transitivity Analysis

Transitivity analysis in UNEP's discourse from COP28 elucidates the processes of social construction that lead to an urgency for action, defining who is accountable for this action, and if the immediacy of climate urgency is expressed theatrically (BIBER & FINEGAN, 1989).

Transitivity does not simply refer to verbs, but the representation of experience through processes, participants, and circumstances. When transitivity is applied to UNEP executive texts and urgent statements across the COP28 event, a reliance on three strategies can be seen. UNEP introduces abstract and collective entities as Actors, emphasizes Material processes that accentuate actions and their effects, and applies circumstantial features to put urgency in place in relation to time, space, and obligation.

Actors and the Distribution of Agency

A pattern in the Primary Participant Roles coding that reveals the most is in the way the UNEP formulates its Actors. The discourse often promotes the abstract entities to the position of Actors as opposed to consistent foregrounding of human decision-makers. An example of this is seen in the sentence, this gap locks in unsustainable levels of fossil fuel production, where the gap is personified as being an actor that is executing a material process i.e. locking in. And similarly in the sentence, the effects of climate change are manifesting and causing havoc in every corner of the planet, the effects is the Actor that is acting. These examples illustrate how responsibility is shifted away from specific governments and attributed to systemic abstractions, a strategy that dramatizes urgency while preserving political neutrality. Table 1 summarizes participant roles across the clause-coded corpus (**Corpus A; N = 3,136 clauses; 3,819 participant-role tokens**), showing **Carriers** as the most frequent (41.7%), followed by **Actors** (25.9%) and **Goals** (20.3%)

Primary Participant Role	Count(n)	Share of participant tokens (%)
Actor	991	25.9
Carrier	1591	41.7
Goal	776	20.3
Sayer	295	7.7
Senser	90	2.4

Existent	64	1.7
Phenomenon	12	0.3

Table 1. Table 1. Distribution of participant roles in the clause-coded corpus (Corpus A; N = 3,136 clauses; 3,819 participant-role tokens).

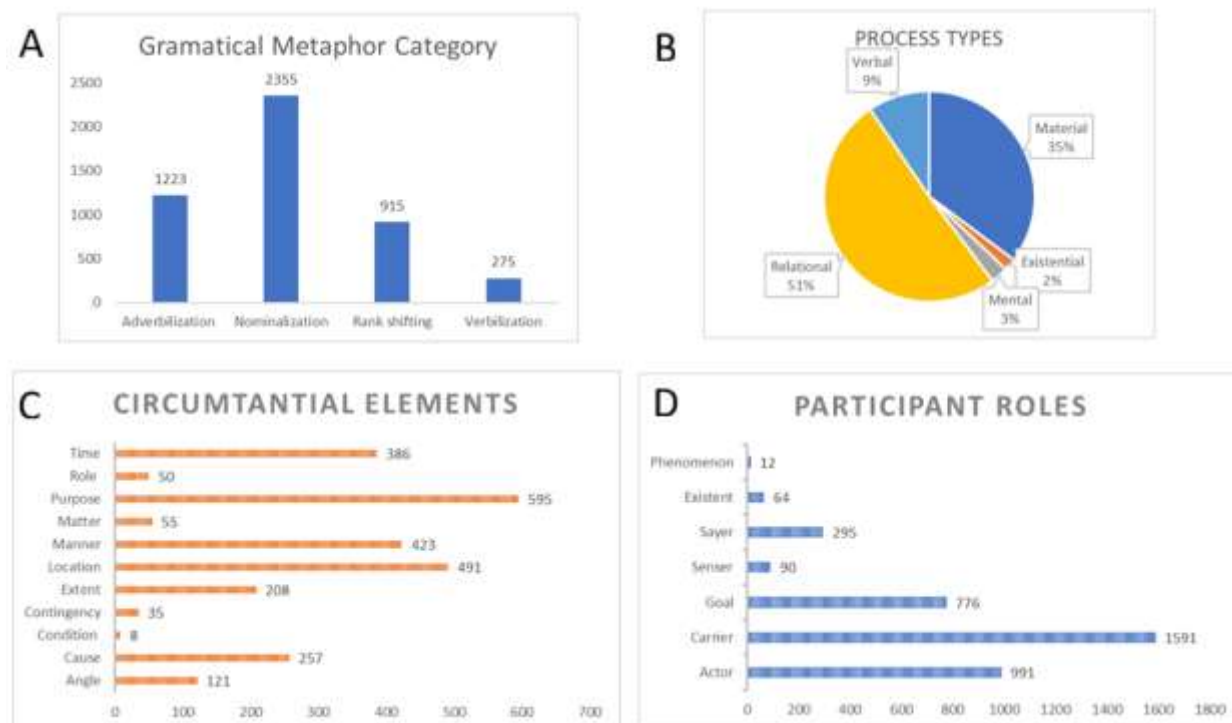


Figure 1. Distribution of grammatical metaphor and transitivity resources in the COP28 Production Gap Report 2023 (N = 3,136 clauses). (A) Frequencies of grammatical metaphor categories (adverbialization, nominalization, rank shifting, verbalization). (B) Share of Hallidayan process types (material, mental, relational, verbal, existential) in the clause-coded corpus. (C) Totals for circumstantial elements (Purpose, Location, Manner, Time, Cause, Extent, Angle, Matter, Role, Contingency, Condition). (D) Frequencies of participant roles (Actor, Carrier, Goal, Senser, Sayer, Existent, Phenomenon). Counts exceed the number of clauses because multiple participants, circumstances, and grammatical metaphors can occur in a single clause.

This outcome is supported by the analysis of the climate discourse by Shaw (2016), who discovered that the texts of the institutions are inclined to give the agency to the inanimate object

such as emissions and warming (Shaw, 2016). It does not go in vain: thanks to such constructions, UNEP will be able to underline how grave the crisis is without directly referring to the particular states or industries. This does not mean that governments are eliminated in the discussion. Some of the assumptions such as the fact that governments still plan on increasing the production of more than two times the amount of fossil fuels in the year 2030 clearly put governments as the Actors of the planning. Nevertheless, these examples are relatively less numerous, which implies a balancing act aimed at naming actors and universalizing responsibility.

The collective nouns like the world are used frequently, contributing to this strategy. The assertion by UNEP that the world would double the remaining emissions budget by 2030 establishes a feeling of collective responsibility and danger. Such a strategy of addressing the urgency of the climate crisis puts the matter in a dynamic process that needs to be acted upon as soon as possible. Adopting abstract entities, such as the gap or impacts, as Actors, is a strategic way of distributing the responsibility between certain governments or industries. Making these non-human agents personified, UNEP emphasizes the global system and the necessary outcomes of the lack of action, which supports the need to take some action. The time context, including a time-bound deadline, e.g., by 2030, further increases the urgency, creating a window of opportunity to act on climate matters. According to Fløttum, Dahl, and Rivenes (2016), the climate discourse frequently uses collective nouns or subjects that make the responsibility universal, which creates inclusiveness and causes confusion in accountability. In this regard, the framing of the Actors by UNEP expresses a twofold mission: dramatising the sense of urgency through abstract agency and diplomatizing the politics of blame (Fløttum et al., 2016).

The Dominance of Material Processes

The Process Types dataset shows that **Relational processes are the single most frequent category in UNEP's COP28 discourse** (1,593 tokens; 50.7% of all process tokens), with **Material processes also substantial** (1,107; 35.3%). Material processes are those that represent doing, acting, and causing change. This dominance is unsurprising given the communicative goal of portraying climate change as a problem of urgent action and consequence. (see Table 2)

Process Type	Absolute Count (n)	Percentage of Total Processes (%)
Material	1107	35.3
Relational	1593	50.7
Verbal	298	9.5
Mental	83	2.6
Existential	59	1.9

Table 2. Absolute counts and percentage share of Hallidayan process types in the clause-coded corpus (Corpus A; N = 3,136 clauses; 3,140 process tokens).

Examples abound. “*Governments should aim for more ambitious reductions*” employs the material process “aim,” with governments as Actors and reductions as the Goal. Similarly, “*fossil fuel combustion leads to around 8.7 million premature deaths annually*” presents “combustion” as the Actor, “leads to” as the process, and “deaths” as the Goal.

Material processes also reinforce inevitability. When UNEP states that “*climate impacts are manifesting and wreaking havoc*,” the verbs “manifesting” and “wreaking havoc” suggest unstoppable processes already in motion. Alongside these, **relational processes are highly frequent**, often in formulations such as “phasing down fossil fuels is inevitable.” These clauses establish states of being or necessity rather than action, situating inevitability as a truth rather than a choice. Verbal processes, such as “*the president acknowledged that phasing down fossil fuels is essential*,” are also present but function mainly to attribute authority or legitimacy rather than to dramatize events.

The **combined prominence of Relational and Material processes** underscores UNEP’s attempt to present climate change both as a structured state-of-affairs and as a dynamic drama of effects. As Halliday (1994) notes, technical and policy discourse often relies on these two process types to make abstract systems tangible and evaluable (Halliday, 1994). In this case, their interaction offers climate change as a crisis that is both **observable** (through material doing and consequences) and

construed as necessary or inevitable (through relational attributions and necessities). This aligns with observations that environmental discourse gives precedence to verbs and constructions of necessity and consequence to enhance urgency (Raymond, 2007).

Circumstantial Elements and the Framing of Urgency

The Circumstances data demonstrate UNEP's use of circumstantial elements to tether urgency to **purpose, time, space, and pathways**. Purpose markers are the single largest category (**595 tokens; 22.6% of all circumstances**), foregrounding what transitions are for (for example, "to keep 1.5 °C within reach" or "to align supply with demand"). Location (**491; 18.7%**), Manner (**423; 16.1%**), and Time (**386; 14.7%**) together anchor these purposes in concrete settings and timelines, with recurrent deadlines such as "by 2030" and "by mid-century" echoing the IPCC's emphasis on near-term action windows (IPCC, 2023).

Other circumstantial types play supporting roles: **Cause** (257; 9.8%) and **Extent** (208; 7.9%) describe the scale and drivers of disruption, while **Angle, Role, Contingency, and Condition** together form a thinner stratum of stance, equity, and feasibility framing. Spatial framings such as "in every corner of the planet" generalize the risk and invite readers to treat climate change as a global, rather than domestic, fact (Nerlich & Jaspal, 2012). Taken together, these circumstantial framings do not merely set the scene; they define urgency as a **time race with clearly framed purposes**, a question of **fair distribution of responsibility**, and a **universal experience** that crosses national and social boundaries.

4.2 Grammatical Metaphor of Transitivity

Building on the transitivity profile above, this subsection examines how the **COP28 Production Gap Report** re-packages experiential meanings through grammatical metaphor of transitivity. We focus on four transformation types: nominalization, verbalization, adverbialization, and rank-shifting, and we report both raw counts and normalized rates per 100 clauses (see Table 3, GM of Transitivity; Source: PGR2023; N = **3,136 clauses**). Across these 3,136 clauses, **nominalization** (2,355 instances; **75.10 occurrences per 100 clauses**) is the most frequent transformation, followed by **adverbialization** (1,223; **39.00 per 100**), **rank-shifting** (915; **29.18 per 100**), and more selective **verbalization** (275; **8.77 per 100**). Because individual clauses can carry more than one grammatical metaphor at once, the total number of GM tokens exceeds the number of clauses,

and the per-100-clause rates in Table 3 therefore sum to more than 100. Together, these transformations compress complex causal sequences, bring actions to the fore, and intensify the call for rapid transition.

GM Category	Total Count (n)	Normalized (per 100 clauses)
Nominalization (v)	2355	75.10
Verbalization (a)	275	8.77
Adverbialization	1223	39.0
Rank-shifting	915	29.18

Table 3. Frequencies and clause-normalized rates (occurrences per 100 clauses) for grammatical metaphor categories in the full COP28 Production Gap Report 2023 (N = 3,136 clauses; 4,768 GM tokens).

4.2.1 Nominalization: processes packaged as participants

Nominalization is the most frequent transformation, indicating a strong tendency to construe actions and processes as “things” that can be counted, measured, and governed. Beyond the overall density (**2,355 instances; 75.10 occurrences per 100 clauses**), patterns such as “reduction of emissions” and “acceleration of deployment” concentrate causal force and facilitate agenda-setting by casting transition work mitigation, decarbonization, implementation as graspable entities, targets, or obligations rather than distributed, agent-dependent activities.

Verbalization is selective but strategic (**275 instances; 8.77 per 100 clauses**). Policy nouns and roles are turned into actions prioritize, operationalize, incentivize shifting orientation from what something is to what actors do. This aligns with implementation talk: instruments and capacities are enacted as ongoing actions, emphasizing momentum and accountability.

Adverbialization is widespread (**1,223 instances; 39.00 per 100 clauses**), realized predominantly through prepositional circumstances and reinforced by explicit temporal pressure markers such as “by 2030,” “within this decade,” and “immediately.” This stacks time-bounded and pathway-

oriented frames through electrification, by pricing, via regulation compressing horizons and sequences while orienting the reader toward specific routes to achievement.

Rank-shifting arises with frequency (915 instances; 29.18 per 100 clauses) when propositional content is embedded as *that/which/who* clauses, simple to-infinitive constructions, or as *ing*-form supplements. By folding causes, conditions and justifications into noun clause elements, the text densifies argumentation in particular, as the effect of having background premises travel with headlines without disrupting reading fluency. The cumulative effect of all of this is that the reader is aware of policy warrants and constraints being available even when they are not thematically foregrounded.

4.3 Interplay between transitivity, grammatical metaphor, and urgency

The interaction between transitivity and grammatical metaphor sharpens the document's urgency profile. From Section 4.1 (**Corpus A; N = 3,136 clauses; 3,140 process tokens**), **Relational processes are the most frequent** (1,593; **50.7 percent of all process tokens**), followed by **Material** (1,107; **35.3 percent**), **Verbal** (298; **9.5 percent**), **Mental** (83; **2.6 percent**), and **Existential** (59; **1.9 percent**) (see Table 2; Source: Corpus A; percent of process tokens). Against this backdrop, the high rates of nominalization and adverbialization in the **Production Gap Report** concentrate much of the material doing into things and circumstances for example, treating decarbonization, implementation, and acceleration as governable entities while binding them to deadlines (by 2030; within this decade) and pathways (through deployment; by regulation). The result is a compressed action grammar: material change reads as both object-like (countable, schedulable) and time-locked (sequenced, deadline-bound). Where verbalization appears, it adds a pointed layer of actionability prioritize, operationalize that steers the reader from recognition to execution. Rank-shifting then keeps reasons, conditions, and constraints continuously co-present, sustaining argumentative pressure without dispersing topical focus. For the circumstantial scaffolding that supports this compression, see Table 4

Circumstantial Element	Total Mentions (n)	Share of All Circumstances (%)
Angle	121	4.6

Cause	257	9.8
Condition	8	0.3
Contingency	35	1.3
Extent	208	7.9
Location	491	18.7
Manner	423	16.1
Matter	55	2.1
Purpose	595	22.6
Role	50	1.9
Time	386	14.7

Table 4. Totals and percentage share of circumstantial categories aggregated across the clause-coded corpus (Corpus A; N = 3,136 clauses; 2,629 circumstantial tokens).

4.4 Strategic framing after the Global Stocktake

Taken together, these transformations help UNEP frame the post-Global Stocktake moment as one demanding managed, accelerated transitions that are measurable, time-bound, and procedurally actionable. By reifying processes and loading circumstances with temporal and pathway detail, the discourse intensifies urgency while making solutions appear administratively tractable. Selective verbalization underscores responsibility as doing, and rank-shifting stabilizes shared premises across clauses, supporting alignment without overt confrontation. In sum, the document's form its grammatical metaphor of transitivity does as much work as its content in construing climate action as both immediate and organizationally feasible in the wake of the Stocktake.

Using the method of process type analysis, this study demonstrates that **Relational processes are the single most common process type in UNEP's COP28 discourse**, with Material processes

also forming just over a third of all process tokens. Together they frame climate change as both a **structured state-of-affairs** and an **active, temporally unfolding process** that needs to be addressed as soon as possible. Material clauses depict climate action not as a static idea but as an immediacy that warrants intervention, while the frequent use of Relational and Verbal processes reinforces this conceptualisation by highlighting links to actors and describing the deployment of action by governments and institutions.

One of the core findings of this study has been the way UNEP uses grammatical metaphor in its language use, that is, in nominalization and adverbialization. The nominalization of activities, such as “emissions reduction” and “carbon lock-in,” e.g., represents them as material entities or objects that can be acted, observed, and managed. The rhetorical impact of the reifying acts as agents or forces has two effects: it expresses the urgency of the crisis, and does not make particular states or actors responsible. This is further dissemination of responsibility whereby the gap or the budget is introduced as a valid agent of action. The grammatical approach is that of urgency and implies inevitability, where climate change and its adverse effects are inevitable unless action is coordinated now.

Moreover, adverbialization has the effect of placing climate change both in time and space. The temporal markers are written into the text, such as by 2030 or within this decade, to establish a narrow time frame that would result in meaningful action whereby these time-bound interactions indicate that a target window of action resulting in meaningful impact is quickly approaching closure, thus increasing the urgency of the task. Similarly, the crisis is universalized in terms of space, like across the globe, in all corners of the planet, to indicate that climate change is not limited to a localized situation. However, it is a problem affecting everyone in every country, cultural group, and community, therefore crossing all the boundaries of nations, cultural identity, and community, with the application of both temporal and spatial markers in reference to time and space, the temporal and spatial construct is created, making the urgency of the action immediate in application and global in scale, reinforcing the call to action of an urgent and united global action.

Besides changing the grammar, rank-shifting enhances urgency by inserting justifications, reasons, and conditions into the discourse. This condensation of arguments enables UNEP to provide

confusing relationships of causality without breaking the smooth and convincing flow of information. By putting these assumptions in the context of the text's background, UNEP enforces the urgency in the message and strategically shifts the focus away from the implementation issues.

The research outcomes also reveal how UNEP makes the post-Global Stocktake moment desperate. By turning words like decarbonization and implementation into a reality and putting them into the context of timelines, UNEP creates an impression that these measures are urgent and can be administratively implemented. It is reconstituted by simply isolating issues and recommending solutions that can be implemented within a specified period, building the urgency and implying that solutions can be implemented. The rhetorical skill of walking the fine line between creating anxiety and promoting constructive dialogue in describing climate change is the best demonstration of the rhetorical ability of UNEP.

5. Limitations

While this study does provide interesting contributions to UNEP's discourse, it acknowledges a few limitations. The analysis draws on a **single flagship document the Production Gap Report 2023 which, although central to the COP28 policy window, cannot capture the full range of UNEP's climate communication across genres** such as press releases, speeches, and technical annexes. Future work could extend the transitivity and grammatical-metaphor coding to a broader set of UNEP texts to interrogate how urgency is constructed in these different discursive contexts more richly. It would also be valuable to explore how diverse audiences receive these grammatical strategies and to test whether the urgency encoded in UNEP's discourse translates into political and policy action.

6. Future Research Directions

Moreover, the research proposes recommendations for future inquiries into grammatical metaphor in global environmental discourse. While nominalization and adverbialization were established as powerful discursive means of instilling a sense of urgency; future investigations could examine other metaphorical structures and the frameworks we produce for climate issues. The metaphorical framing of CC as a "war" or "battle" in whether political or media discourse (Lakoff, 2010), is one

structure wherein the linguistics might provide deeper understandings of how we think about and deliver CC risk to the public and political arenas.

Conclusion

This study thoroughly analyzes UNEP's climate discourse through the Systemic Functional Linguistics (SFL) framework, specifically focusing on how transitivity and grammatical metaphor are responsible for constructing urgency and distribution of responsibility. In this study, I both contribute to understanding UNEP's use of language to build climate change as urgent. Still, I also demonstrate the power of grammar as a linguistic resource to generate political narratives and push individuals to act. This research highlights the role of language as a mechanism for building urgency in global communication about the climate. I have answered the research problems using the empirical evidence from UNEP's COP28 discourse to show how transitivity and grammatical metaphors construct urgency and actionability into climate communication. Relational and Material processes together structure the discourse so that climate change appears both as a state of affairs and as an urgent, unfolding process that requires action and response. Nominalization and rank-shifting transform the concept of climate change from abstract into concrete, agentic subjects, increasing the discourse's urgency. By framing climate action as both inevitable and immediate, UNEP's discourse constructs urgency around the climate crisis while strategically allocating responsibility for the crisis to various global actors. From a Systemic Functional Linguistics perspective, we have attempted to show clearer examples that UNEP's COP28 discourse uses a suite of grammatical resources, including transitivity and grammatical metaphor, to construct climate change as an urgent and actionable problem. Shifting agency and person accountability from individuals to abstract forces, while binding time to when action will take place, UNEP's language communicates scientific facts and persuades and mobilizes political actors. This paper shows that urgency is not simply a matter of what is said, but how it is said: the grammatical choices made by UNEP reinforce the idea that climate action is not just necessary but imminent, and that the time to act is now.

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