P/REFERENCES OF DESIGN

WHAT DO WE MEAN: THE LANGUAGE OF DESIGN FOR SUSTAINABLE PRACTICES.

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ABSTRACT | Design research has metamorphosed over the last ten years, with discipline titles becoming muted and complex. Discipline terminology previously dictated outputs, for example product design included artefact outputs, but now includes strategic direction, highlighting the importance of clear communication. This change serves as a catalyst for enquiry, not only in what design is, but shifting the speculative realm of what it can do, cultivate, or foster.

This position paper underscores the importance of language in shaping sustainable futures diverging from conventional paths. Climate change impacts all life forms, and design has a dual role as a solution and a challenge in confronting climate-related issues (Godelnik, R. 2021). The distinction between participation and empowering individuals to have agency emerges as pivotal in this context. This however is reliant on the systems, interventions, and agency those individuals are empowered with. Emphasising language's significance in post-participatory activities - the shift in how we can think about design methods, moving beyond typical user involvement to empower communities and foster more inclusive, dynamic results, bringing agency, choice, and citizenship. This article addresses how language has been underexplored within "design for sustainable practices" compared to its prevalence in "design for inclusion" (Nuñez, 2013; Reed and Monk, 2006).

1. Introduction

Traditionally, 'participation' is defined as attending and participating rather than having a sense of autonomy. Going beyond this, into what has been termed ‘post-participatory,’ are approaches such as Engaging Design (ED). ED initiates active involvement (as a new route by which to generate design propositions) within communities and society. ED is an empowering practice, traversing beyond participation in the traditional sense of attending and participating, energizing communities, providing agency, and facilitating 'self-authored' and 'community-authored' responsible change (Phillips and Gant, 2021).

Our agenda within The Ecological Citizens network+ project aims to work collaboratively with citizens in this responsible way, actively shaping environments within a contemporary design framework. The project looks to foster and proactively encourage (through technologically appropriate interventions) Ecological Citizenship for positive climate action, while funding and working with a network of projects. As such, the project underscores language as a crucial component in design, influencing perceptions and power dynamics in co-design processes (Sanders et al., 2008, p.16).

The objective of this article is to propose a glossary of terms. The suggested glossary, curated here by team members of The Ecological Citizens network+, offers a preliminary glimpse into terms commonly employed in discussions about design for sustainable practices. These terms, including, for example, 'gatekeeper' and 'preferable futures,' prompt the need to interrogate and comprehend nuanced meanings, assumptions, potential cross-disciplinary misunderstanding, and variations in interpretation. Ultimately, the study advocates for an inclusive design approach driving responsible transformations in the face of challenges like the climate crisis, climate justice, and ecocide. The approach used here looks at language and terminology aiming to foster collaborative and inclusive approaches crucial for sustainable transitions without marginalizing or undermining societies or cultures.

The People & Planet Consumer Insights report (2023) underscores the significance of engaging diverse audiences on "people and planet" topics, blending rational and emotional dimensions. Language and comprehension, as the report suggests, become pivotal in this engagement. Here, the concept of people and planet encapsulates distant futures, envisioning a world where everyone is included, possesses agency, and collaborates to achieve shared goals. Plus, the glossary provokes reflection on the potential implications and nuances associated with linguistic choices, advocating for language that is not only reflective of contemporary design frameworks but also instrumental in driving positive and responsible transformations in societal and cultural contexts.

Our perception of design is inherently shaped by the intangible nature of speculative and design fictions, where the boundaries between imagination and reality blur. In these creative realms, language becomes the linchpin, weaving narratives that transcend the tangible, challenging conventional notions of what design can be. These speculative narratives not only illuminate potential futures but underscore the profound role language plays in anchoring and navigating the landscape of design exploration.

Understanding these terms holds significant importance in fostering collective action that does not reinforce systems of structural inequality (Costanza-Chock, 2020, p.23), especially in addressing the pervasive impact of climate change on our global community. Recognizing this, it becomes crucial to acknowledge the potential influence of language on individuals' autonomy and self-perception in their roles, considering diverse backgrounds and perspectives. In the context of 'post-participatory' co-design practices related to climate change, thoughtful cultivation of language becomes imperative.

Design practices are also intricately linked to individual roles, skills, relationships, and perspectives (Marxt and Hacklin, 2005, p.416). Therefore, it's crucial to grasp how this diverse array of backgrounds and experiences influences the definition of terms and the use of language. For example, designers and facilitators bring their own cultural perspectives, making language a fundamental component of co-design.

However, language encompasses more than just terms; it doesn't inherently spark dialogue on its own (Rodenburg, 2018). Within various fields like employment and education, power imbalances and hierarchies persist (Shenk et al., 2023). Language holds the ability to either empower or marginalise, influencing trust and inclusivity. Design, encompassing specialised practices across multiple fields and drawing from everyday lived experience knowledge (Costanza-Chock, 2020), serves as a dynamic arena where power imbalances persist, mirroring broader societal issues. Plus, interpretations can shield meanings held by different languages. Take, for example, the Welsh term "Cynefin." While its English translation is "habitat," its significance extends far beyond, encapsulating a holistic concept that integrates the physical, social, cultural, spiritual, and economic dimensions of a place. It delves into the intricate interactions among these dimensions, offering a comprehensive understanding of the interconnected nature of a locale (Mayo, 2023). Plus, consider the example "paint it" and "cover it in paint," which are used interchangeably in certain instances, alongside their unique implications in different contexts. In the realm of decorating, both phrases may essentially convey similar meanings, indicating the application of paint to an area. However, when applied to artistic painting, "paint it" may imply the creation of a scene or portrait, allowing for a more open and interpretive approach. On the other hand, "cover it in paint" implies a thorough and complete application, suggesting total coverage. Recognizing these subtle differences enhances our understanding of how language nuances contribute to varied interpretations in different scenarios.

These instances highlight the intricate nature of language, where subtle nuances can lead to misunderstandings or reinforce bias. This underscores the significance of navigating linguistic intricacies by conducting activities such as collaborative glossary generation, as detailed here.

1.1 Fostering Design in a Post-Participatory Landscape

Post-Participatory design represents a shift in how we think about design methods, moving beyond typical user involvement to empower communities and foster more inclusive, dynamic results, shifting the landscape bringing agency, choice, and citizenship. This shift in methodology is rooted in various design-led languages such as living labs, co-design, participatory design, pluriversal design, user-centred design, planet-centred design, and design for/with ageing (Tironi et al., 2023, Brophy et al., 2023). These interconnected concepts significantly impact the engagement of communities in the design process. Building upon Frayling's theories and design-driven approaches (Frayling, 1994), practitioners seek to enhance co-design practices by using precise terminology. A tangible demonstration of this impact is reflected in our deliberate use of the term 'design proposals' instead of 'solutions' (Gaver et al., 1999). This choice underscores the importance of incorporating diverse voices right from the inception of a design proposal, emphasising the avoidance of prescribing a solution. Careful choice of language is particularly important when engaging with diverse groups of people. By working in an effective collaborative way with communities, there is a necessity to acknowledge and honour the diverse values of indigenous populations, embracing non-colonial design principles (Valencia Sáiz, 2005), (Ivison et al., 2000). The differences in participatory design approaches based on national contexts and cultures, emphasise the need for heightened awareness of the limitations of personal viewpoints in representing diverse cultural backgrounds (Cahill et al., 2007). This restricted understanding of diverse perspectives constrains open discourse in emerging design propositions. Calls to revisit design-centric dialogues to include criteria guiding local solutions and broader visions are emerging. This discourse should foster a dialogic approach, encouraging diverse participants, including design experts, to interact, exchange ideas, and embrace their roles (Tham, 2021).

1.2 Why Focus on Language?

Language is integral to co-design and the 'post-participatory' discipline, shaping how parties perceive and engage in the process (Cooke and Soria-Donlan, 2019). In digital design, it goes beyond technical skills; it requires considering the human element and navigating cognitive complexities (Gray, 2016). Exploring semiotics and product language offers profound insights into how linguistic elements influence the product landscape, enhancing the co-design journey. Different language interpretations impact how co-design is

conveyed, executed, and measured (Kleinsmann and Valkenburg, 2008). Understanding diverse language perspectives is crucial for inclusive design in these realms, often dealing with intangibles and narratives (Huybrechts et al., 2017).

The recognition of language's power to both include and exclude emphasises the need for thoughtful word choices and a serious consideration of their impact. For instance, terms like 'user' and 'stakeholder' carry negative connotations, linked to addiction, exploitation, or corporate agendas that may perpetuate colonialist attitudes (Kleinsmann and Valkenburg, 2008; Banerjee, 1999). Exploring alternatives like 'interested party' instead of 'stakeholder' sparks pertinent discussions about fostering action and agency among citizens. The understanding gap in common terminology can significantly affect citizens' agency, calling for discussions around political agency and civil society perspectives in promoting citizenship. Language holds immense power in framing co-design sessions, influencing design justice, and contributing to the vision of a sustainable future. How we describe climate change and the emotions and actions these descriptions evoke are critical in shaping our collective perception of the future and our ability to instigate change.

1.3 Our Positionality

In the landscape of design discourse, the Ecological Citizen(s) team recognises its roles as citizens, researchers, and designers. Design (as a practice) has transformed in the last decade with advances in new practices, definitions including; Community Technology (Hess, 1979), Public-Interest Technologies (Ford Foundation, 2024) and Citizen Designers (Heller, & Vienne, 2003). Members of our team draw from these contemporary design practices and apply them to the critical questions of how humanity can live sustainably. Our strength is in our different disciplinary backgrounds, the network we are building lies in creative problem-solving within the expansive domain of design, distinct from the expertise of language experts. As we navigate this intersection of disciplines, we acknowledge and address the gaps in our knowledge. Embracing a holistic approach, we celebrate our expertise while openly acknowledging the expertise and lived experiences our team may lack. This conscious recognition fosters a culture of humility and openness within our collaborative efforts. This conscious acknowledgment allows us to address knowledge gaps effectively. We actively integrate diverse perspectives into our team, placing value on input beyond our immediate disciplines. This inclusive approach contributes to a comprehensive understanding of the challenges we tackle, promoting an environment where humility and openness are embraced.

We position ourselves as active participants in an expansive dialogue, presenting research characterised by an inclusive structure, delving into the profound impact of language in contemporary discussions on community action and citizen cultures. Our work serves as a valuable resource, fostering collaboration and fresh perspectives among scholars, practitioners, and participants. By avoiding the 'god trick' (Haraway, 2016) – the detached and objective reporting on subjects – we ground our perspectives in personal experiences and professional engagements, avoiding impersonal authorship and upholding accountability. In discussing language, we recognise the richness of cognitive and physical diversity, understanding that ways in which diverse brains and bodies work contribute uniquely to our understanding of ecological issues. Embracing varied perspectives allows us to glean insights from different modes of thinking, influencing design language beyond mere vocabulary into spatial, visual, haptic, and sonic experiences (Costanza-Chock, 2020). This multi-sensory approach acknowledges the importance of making ecological concepts more accessible and engaging. Inclusive design language bridges gaps in accessibility, fostering a shared understanding of environmental issues through interactive installations, visually compelling graphics, or immersive sonic experiences.

Additionally, we acknowledge our team's limitations and the lack of diversity in certain backgrounds. We openly admit our lack of experience in certain areas, understanding the importance of humility in the face of complex ecological challenges. Recognising that our approach is embedded in Western European viewpoints, and as such we need to emphasise inclusivity by embracing other perspectives. We aim to create a comprehensive strategy for building a sustainable global community, including non-humans. The project encourages a holistic approach that integrates insights from ecology, ethology, and environmental

science, recognising the intricate balance of our planet, involving both human and non-human realms. This approach challenges the dominance of predatory and capitalist ways of knowing, valuing alternative paradigms such as cooperation-based ecosystems (Energy Observer, 2023). By incorporating narratives that emphasise cooperation, reciprocity, and holistic interconnectedness, we aim to shift the focus from purely monetary values to a more comprehensive understanding of sustainability encompassing social, environmental, and economic well-being.

2. Method

The glossary of terms utilised in this study is curated through our collaborative efforts in *the Ecological Citizen(s) network*[+]. We, a diverse array of experts spanning ecological sustainability, design, and community engagement, have created this essential compendium aimed at cataloguing, refining, and unifying the terminologies crucial to our joint endeavours in participatory, sustainable, and design-led initiatives. Our discussions explore the intricate realms of design methodologies, with a particular focus on integrating participatory approaches and sustainable practices within projects.

This process is characterised by our collaborative sessions, conversations, and thorough deliberations, aiming to extract and articulate terms specifically pertinent to the convergence of Ecological Citizenship (Jagers et al., 2013), participatory design principles (Spinuzzi, 2005), and sustainability frameworks. Our primary objective is to construct a comprehensive repository that captures the intricate, multifaceted dimensions intrinsic to the essence and depth of our work. During our discussions, significant terms that naturally arise and spark conversation are documented and subsequently incorporated into the glossary. We are then encouraged to contribute our own perspectives, interpretations, and definitions for each term, thereby highlighting the diverse range of meanings associated with them. To promote transparency and clarity, the glossary document is made accessible to all of us. This accessibility allows us to add new terms, or clarify existing ones, if we perceive variations in understanding among our colleagues. To facilitate open and honest contributions, the option for anonymous input is also provided. Furthermore, the EC glossary has been designed with designated sections for us to append supplementary information, evidence, or factors we deem important. This structure aims to encourage thorough documentation, enabling us to provide context and substantiate our individual understandings of the terms.

The terms entered into the EC glossary, along with our respective explanations, undergo analysis with core members of our group (backgrounds in social science, design, art). This analytical process aims to unravel the diverse understandings of each term and elucidate the main reasons behind these variations. Firstly, we examine entries to identify patterns and commonalities in the provided explanations. By categorising and clustering similar interpretations, we seek to discern any consensus or recurring themes among us. Simultaneously, we delve into instances where discrepancies or varied understandings emerge. These points of contention are closely scrutinised to uncover the underlying factors contributing to the diversity of perspectives. Factors such as our individual experiences, professional backgrounds, or contextual nuances are incorporated where possible and considered in this analysis. Following the analysis of varied glossary term understandings within our group, an additional layer of depth is introduced by seeking theoretical insights. We recognise the value of grounding our interpretations in established theories and conceptual frameworks, to provide further evidence and context for the diverse perspectives captured in the glossary.

The process involves consulting relevant literature, academic sources, and established theoretical frameworks that pertain to the specific terms in question. This exploration aims to identify existing theories that align with, or contradict, the interpretations within the glossary entries. By doing so, we seek to validate and enrich our understanding of the terms, with insights from scholarly research and established academic discourse.

3. Results

Within the *Ecological Citizens*, the evolution of the glossary stemmed from the natural flow of organic discussions within routine team meetings. These sessions were characterised by their inclusivity, allowing for open dialogues that encourage team members to contribute insights from their diverse disciplinary backgrounds. As the team delved into various aspects of *Ecological Citizenship*, sustainability, and design, terms such as “gatekeeper”, “preferable futures”, “agency”, “bottom-up”, “client”, “citizen”, “community”, “expert”, “hyper-local”, “layperson”, “more than human”, “participant”, “non-human”, “stakeholder”, “steward”, “top down”, “touchpoint”, “user”, and “volunteer” naturally emerged in discussions. Table 1, details firstly the overview of the team regarding specific terms, along with reflection of varying cross-disciplinary theoretical commentaries on the term.

Table 1: Glossary terms and insights from *Ecological Citizens* team members are to their definitions, and understandings.

Term	Insights from EC team on terminology	Reflections on cross-disciplinary variations
Agency	‘Agency' was suggested to encompass the inherent capacity of an individual or group to take action and wield influence. The term sparked debates over the nuanced question of just how much autonomy and influence someone or a group genuinely holds within a specific system. It's crucial to note that agency isn't something that can simply be handed over to an individual; rather, it emerges from the intricate interplay of personal and collective capabilities within a given context, meaning care is needed in its use.	The concept of agency is intricately tied to personal empowerment in psychology, involving self-efficacy and autonomy. This underscores the importance of individuals acknowledging and leveraging their potential to influence preferred future trajectories, as the Ecological Citizen(s) seek to assist with. In governance and sociology, agency is closely associated with decision-making powers, exerting a significant impact on policy formation and societal frameworks. However, it is crucial to approach the use of agency with care, recognising its dual nature. While in psychology, it acts as an internal force driving personal empowerment, in governance and sociology, it manifests as a dynamic force influencing collective decision-making.
Bottom-up	Team members attributed different meanings to the term 'bottom-up' and its approach, with a significant aspect being its association with a lower-status position. Notably, ambiguity arises regarding its operationalisation and the extent of grassroots engagement, especially when scrutinising the intricate details of the precise origins of these initiatives. Caution was emphasised by team members when using the term due to the fluidity of the 'bottom-up' concept, which allows for interpretive flexibility. This flexibility enables organisations and individuals to tailor its definition to align with their specific objectives or ideological frameworks, further emphasising the potential for a lower-status connotation.	Within governance, it might involve community-driven policies; while in design, it could refer to user-driven innovations, further highlighting the need to be context specific and cautious in its use.
Client	Discussions on the use of the term ‘client’ revolved particularly around power dynamics, acknowledging that it implies a transactional relationship, with one party being in service to another, often failing to capture the iterative nature of many partnerships, such as designer/client relationships. The term "client" does not adequately reflect the evolving and collaborative nature of these interactions. Participatory activities, which involve individuals and stakeholders in decision-making processes, challenge the term "client" by underscoring the empowerment of those shaping the design or decision-making process. Terms like "partner" are considered more fitting as they better express the collaborative essence, moving away from the transactional connotations associated with the term "client."	In psychology, the term might relate to a patient; whereas in business or design, it could refer to a customer or user.

Term	Insights from EC team on terminology	Reflections on cross-disciplinary variations
Citizen	The term "citizen," traditionally signifying a member of a state or community with specific rights and responsibilities, requires caution in design and participatory activities due to variations in understanding, and the notion that citizenship and membership to nations is for many complex and perhaps, for some, harbours issues of exclusion. As such, team members suggested that designers might adopt more inclusive terms like "community member" or "vested interest party" to better capture the diversity and complexities inherent in the design and participation processes, avoiding unintended exclusions and promoting a more equitable and culturally sensitive approach.	In political science, it relates to legal status, whereas in sociology or design, it might emphasise community engagement or participation.
Community	The term "community" typically refers to a group of individuals sharing common interests, characteristics, or geographical locations; yet within design and participatory activities, its understanding can vary, necessitating caution in its use. Interpretations of "community" differ concerning boundaries, inclusivity, and cohesion. It might encompass a local neighbourhood, an online community, or a group bound by cultural ties. Discussions with the team suggested designers need to be mindful of these variations, as assumptions about the nature and extent of a community can impact the inclusivity of design processes. A term that seems universally understood may carry diverse meanings, potentially leading to miscommunications or overlooking the needs of specific subgroups. Therefore, precision and sensitivity in language are crucial to ensure that the term "community" is applied contextually, fostering a more accurate understanding of the diverse groups involved in design and participatory activities.	In sociology, it involves social structures, while in urban planning or design, it might relate to neighbourhood dynamics and spatial arrangements.
Expert	The term "expert" denotes an individual with specialised knowledge or skills in a particular field. However, within design and participatory activities, its understanding can vary, necessitating caution in its use. The contestation revolves around defining expertise, expertise hierarchy, and the criteria for labelling someone as an expert. In design, team members suggested expertise may encompass diverse domains, including technical proficiency, user experience insights, or cultural understanding, meaning caution is essential as the traditional hierarchical view of expertise might overlook valuable perspectives from non-traditional experts, such as end-users or community members.	In academia, expertise might be defined by research contributions; while in industry, it might focus on practical experience.
Gatekeeper	The term "gatekeeper" can have varied meanings within design and participatory activities, requiring caution in its use. In different contexts, a gatekeeper might be understood as a person, institution, or system controlling access to information, resources, or decision-making processes. Depending on the perspective, a gatekeeper can be seen as a facilitator enabling equitable access, or a barrier restricting entry. In design, issues can arise because design processes often involve multiple actors, and the role of gatekeepers can influence the inclusivity of these activities. When using the term, team members suggested a mindfulness of the potential power dynamics associated with gatekeeping is required, ensuring that it aligns with the principles of fairness, transparency, and equal representation.	The term might vary in interpretation between disciplines. For instance, in sociology, it could refer to social hierarchies, while in design, it might encompass access control in participatory processes.
Hyper-local	The term "hyper-local" refers to a highly localised or geographically specific context within design and participatory activities. Contested meanings arise regarding the scope and scale of what constitutes "hyper-local," particularly considering variations in geographical size and social dynamics. The definition may differ depending on the design project, cultural factors, or community characteristics. What is considered hyper-local in one context might not apply universally. Designers must be attentive to the nuances of the term, ensuring that its application aligns with the specific context at hand.	In journalism, it might relate to neighbourhood news, while in environmental studies, it could involve micro-scale ecological systems.

Term	Insights from EC team on terminology	Reflections on cross-disciplinary variations
Layperson	The term "layperson" refers to someone without specialised knowledge in a particular field, but its understanding within design and participatory activities can vary, necessitating caution in its use. Contestation emerged within the team around defining the extent of knowledge considered "specialised" and the expertise gap between professionals and laypersons. In design, where collaborative processes often involve diverse stakeholders, the term "layperson" may inadvertently imply a hierarchy that could marginalise the perspectives of individuals with lived experience. As such awareness is crucial as the line between specialised and general knowledge can be subjective and context-dependent.	In medicine, it refers to non-professionals, while in design or technology, it could relate to non-experts.
More than human	The term "more than human" emphasises considering entities beyond humans, including animals, ecosystems, or artificial intelligence, within the scope of human-centred design. However, discussions around meanings concerned the ethical considerations, responsibilities, and rights attributed to these "more than human" entities. In design and participatory activities, understanding the term can vary based on perspectives regarding the moral obligations and considerations owed to non-human elements. As a team there is the suggestion of a need to navigate the ethical complexities associated with extending design considerations to include these entities, with questions about their rights, agency, and the potential impact of design decisions on their well-being introducing challenges that require careful consideration.	In environmental ethics, it relates to non-human entities' intrinsic value, while in design, it might involve inclusive design practices considering diverse users.
Participant	The term "participant" refers to someone involved in a particular activity or process within design and participatory activities, but caution is needed in its use due to potential variations in understanding; however, the level of involvement, distinctions between active and passive participation, and the perceived roles of participants within a given process, are key aspects in need of discernment when using the term. Participant can encompass a spectrum of engagement, from those actively contributing, to those with more passive involvement. Team members suggested a need to be mindful of the diverse ways participants may interpret their roles and contributions, ensuring that the term accurately captures the range of engagement within a specific context.	In research, it could involve study subjects, while in design, it might involve actors engaged in co-creation processes.
Preferable future	"Preferable futures" refer to futures that are considered desirable, ethical, and just. Team members suggested that the concept of desirability and ethicality is subjective and as such discerning its precise use is important, especially considering 'preferable' can differ significantly based on cultural and disciplinary viewpoints. What may be deemed preferable in one cultural or disciplinary context might not align with the values or perspectives of another. There is a need to be cautious in assuming a universal understanding of what constitutes a preferable future and be attentive to diverse cultural, social, and ethical considerations.	The interpretation might vary between environmental sciences, sociology, and design. For environmental sciences, it could relate to sustainability, while in sociology, it could involve societal well-being.
Non-human	The term "non-human" refers to entities or beings that are not classified as human. However, its use within design and participatory activities can cause ambiguity, regarding the inclusion of various entities such as animals, ecosystems, or artificial intelligence within this category. Debates can emerge about the ethical considerations and treatment of these entities, as different perspectives exist on their rights, agency, and the responsibilities humans bear toward them.	In environmental studies, it might include ecosystems, while in technology, it could encompass AI or robotics.

Term	Insights from EC team on terminology	Reflections on cross-disciplinary variations
Stakeholder	The term "stakeholder" denotes an individual or group with vested interests or influence in a particular process or system within design and participatory activities. However, discussion within the team suggested its use may be contentious regarding the identification, prioritisation, and representation of stakeholders, as well as their roles and responsibilities. The understanding of who qualifies as a stakeholder can vary based on perspectives and may involve negotiations about whose interests should be considered. Additionally, debates may emerge concerning the level of influence different stakeholders should have, and the ethical considerations related to power dynamics. Plus "stakeholder" also holds colonial connections, with a stakeholder being a person who drove a stake into the land to demarcate the land they were occupying or, in many cases, stealing from indigenous territories. This historical association underscores the term's colonial legacy, and as such when considering the term, we must be acutely aware of this context to avoid perpetuating power imbalances, or inadvertently replicating colonial practices	In business, stakeholders might involve investors, while in urban planning, they could be residents or community groups.
Steward	The term "steward" refers to someone responsible for caring for or managing something within the context of design and participatory activities. Within the project's context, interpretations varied, leading to debates regarding the scope of stewardship, the extent of responsibilities, and the ethical considerations guiding stewardship actions. Different perspectives on what constitutes appropriate care, the boundaries of stewardship, and the ethical implications of management decisions can contribute to varying understandings of the term.	In ecology, it might relate to environmental conservation, while in governance, it could involve responsible management of resources.
Top down	The term "top-down" signifies an approach in which decisions or directives originate from higher levels of authority and are implemented downward. Within the team, concerns of the term's use centred around centralised versus decentralised decision-making and the efficacy of top-down approaches, criticising them for lacking inclusivity and neglecting grassroots perspectives.	In management, it might relate to hierarchical structures, while in governance, it could involve policy implementation.
Touchpoint	The term "touchpoint" signifies a specific interaction or moment of contact between an individual or group and a product, service, or system within the context of design and participatory activities. When using the term however, team members suggested interpretations may vary, leading to debates about defining the scope and significance of touchpoints. Some may emphasise the tangible points of contact, while others may consider broader aspects, including digital interactions and emotional engagements; meaning there should be caution to avoid assumptions about the universality of touchpoints and be attuned to diverse perspectives on what constitutes a meaningful interaction.	In marketing, it might relate to customer engagement, while in design, it could involve user interface interactions.
User	The term "user" details an individual who interacts with a product, service, or system(s). However, there were concerns raised that some may view users narrowly, focusing on their roles as consumers, while others may advocate for a more inclusive perspective that acknowledges diverse skill levels, backgrounds, and the potential for users to actively contribute to the design process through co-creation. As such the term "user" can imply a more passive role, lacking the recognition of active involvement and collaboration that co-creation entails, for instance. Consequently, there is the need to exercise caution to avoid limiting their understanding of users to mere consumers and recognise the potential for collaborative engagement, where users become contributors, providing valuable insights.	In technology, it might involve end-users, while in design, it could encompass diverse user personas.

Term	Insights from EC team on terminology	Reflections on cross-disciplinary variations
Volunteer	The term "volunteer" refers to someone who offers their time or services without monetary compensation within the context of design and participatory activities. Within the team, it was suggested that care is needed in the terms used, to avoid assumptions about the uniformity of motivations and commitment levels among volunteers. Additionally, recognising potential power dynamics and ensuring a respectful and inclusive environment for volunteers is essential to prevent unintended consequences.	In social sciences, it could relate to civic engagement, while in humanitarian fields, it might involve disaster relief efforts.

A key theme emerging from the glossary revolves around power dynamics. The term "agency" emerges as a concept with differing possible values attached, encapsulating the capacity of individuals or groups to act and exert influence (Bandura, 2000). While psychology tends to view it as personal empowerment; governance and sociology engage in debates concerning the distribution of decision-making power within systems. This ongoing discourse emphasises the crucial need for design practices that actively transform power dynamics. Such practices aim to empower communities and amplify the voices of marginalised groups, or indeed "grassroots groups" (Smith and Ely, 2015), enabling them to act as agents of change in shaping sustainable futures. Additionally, the reimagining of relationships talks to power dynamics, with terms such as ‘client’ and ‘collaborator’ in need of attention. The concept of the "client," traditionally denoting the receiver of services, is transformed in sustainable design. Power dynamics and responsibilities within this relationship become fluid, blurring the lines between passive recipient and active collaborator. Design demands a shift towards viewing users, citizens, and communities as co-creators with shared ownership and responsibility for shaping sustainable solutions. The potential power of gatekeepers is also emergent. Can they be facilitators of equitable participation or formidable barriers restricting entry? The answer lies not in the gatekeeper itself but in its function. Design must actively dismantle gatekeeping structures, ensuring open access to knowledge and resources for all participants, regardless of background or expertise.

The second key theme emergent from the glossary is the need to consider beyond traditional views of what citizens are, and can, do. For instance, embracing a diverse interpretation of what a "community" could be, paves the way for design practices embracing the fluidity and inclusivity of communities, weaving together diverse perspectives for holistic solutions. Connected to "community" (Sedita and Blasi, 2021) and its diverse perspectives, is the need to reconsider expertise, and challenge hierarchies. Indeed, the term "expert," signifying specialised knowledge, undergoes deconstruction in sustainable design. Traditional academic definitions face challenges from industry-focused perspectives valuing practical experience. This contest necessitates acknowledging diverse forms of expertise, including indigenous knowledge and local knowledge, embedded within communities, to enrich design processes and empower a wider range of voices. These voices, for instance, could be from "laypersons." However, by questioning the boundaries of "specialisation," design can empower multiple actors to become active co-creators. Open-source platforms, accessible tools, and inclusive workshops can bridge the knowledge gap, transforming laypeople from passive subjects into informed participants shaping their sustainable environments.

The third area of findings from the glossary is that of fostering different futures. For instance, the notion of hyper-local solutions for a global future: "hyper-local," emphasising highly localised contexts, sparks debate on scope and scale. While journalism associates it with neighbourhood news, environmental studies delve into micro-scale ecological systems. This diversity underscores the importance of tailoring design solutions to the specific characteristics and needs of each hyper-local context, recognising unique ecological, social, and cultural landscapes. Plus, there is the suggestion to envisage shared futures, and incorporate more than human perspectives. The concept of "more than human," encompassing entities beyond humans in design processes, challenges anthropocentric perspectives. Debates on ethical considerations and responsibilities towards these entities highlight the need for design to embrace a biocentric worldview. Ecological systems, animals, and even AI, are recognised as active participants in shaping sustainable futures. Lastly, there is also the need to navigate ethical complexities when it comes to building preferable futures. Cultural and disciplinary viewpoints significantly influence what constitutes a "preferable" future, necessitating cross-

disciplinary dialogue and collaborative visioning processes. Design plays a crucial role in facilitating these conversations, ensuring that sustainable solutions reflect diverse perspectives.

4. Discussion

The Ecological Citizen(s) organically developed its glossary through inclusive team meetings that encouraged contributions from diverse disciplinary backgrounds. As we explore Ecological Citizenship, sustainability, and design, terms like 'gatekeeper,' 'preferable futures,' 'agency,' 'bottom-up,' and 'volunteer' have naturally emerged, becoming integral components of our discussions, reflecting the multifaceted considerations of the project. In sustainable participatory design, terms are influential agents shaping foundational aspects and guiding ethical decision-making. Distinctions between terms like 'sustainability' and 'resilience' signal nuanced preferences, influencing the ethical framework. Recognising the contested nature of these terms is crucial to ensure shared understanding and cooperation, and respect for the diversity of backgrounds which formulate varied approaches and understandings.

This diversity of language and the multilingual nature of our international team, with Welsh, Norwegian, French, and English spoken, heightens the necessity for interpersonal understanding in the design realm. Language, extending beyond a mere communication tool, shapes cultural perspectives, especially in discussions about nature and the environment. Our commitment to linguistic diversity aligns with the acknowledgment that different languages offer distinct lenses through which we perceive and engage with the natural world. Recognising implicit hierarchies within terms, the team acknowledges the power dynamics in participatory design processes, emphasising language choices beyond communication efficiency to promote inclusivity and equity.

Furthermore, our commitment extends to promoting language that represents non-humans.The intentional shift towards inclusive and precise language within participatory design practices acknowledges the transformative potential of language in altering power dynamics. This conscious alteration ensures a more democratic decision-making process, allowing diverse voices, including non-human perspectives, to shape design outcomes. With members of *the Ecological Citizen(s)* team holding a particular interest in promoting non-humans in design decisions, the adoption of precise and inclusive language fostered collaboration, minimised misunderstandings, and created a common understanding, leading to more cohesive teamwork and a collective approach to problem-solving, particularly for non-human parties who cannot speak for themselves. Plus, the impact of knowledge encapsulated in terms within participatory design extends beyond the design community, resonating through various societal layers, and directly influencing communities with diverse values. The ethical considerations arising from the impact of knowledge involve awareness of the potential consequences of terms on diverse communities, emphasising the need for sensitivity to cultural nuances, and recognising the interconnectedness of social, cultural, and environmental challenges.

5. Conclusion

This article delves into the transformative journey of design research over the past decade, where disciplinary titles have evolved into complex, muted forms. The shift in design terminology, from focusing solely on tangible outputs to encompassing strategic direction, underscores the importance of language in shaping the field. This paper emphasises the role of language in propelling Ecological Citizenship and steering the trajectory toward sustainable futures, diverging from conventional paths.

As the impacts of climate change are ever more present, design emerges as both a solution and a challenge in confronting climate-related issues. The distinction between mere participation and empowering individuals to have agency becomes pivotal, contingent on the systems, interventions, and agency those individuals are empowered with. The article has shed light on the underexplored realm of language in "design for sustainable practices," compared to its prevalence in "design for inclusion." The presented iterative glossary lays the groundwork for the burgeoning field of post-participation, not as an authoritative guide, but as a collaborative effort reflecting the diverse interpretations within the evolving design

landscape. The exploration underscores language as a crucial component in design, influencing perceptions and power dynamics in co-design processes. The advocacy for language fostering collaboration, aligns with contemporary notions where precision in language cultivates trust and propagates cultural understanding. Exploring the significant impact of language within design emphasises its pivotal role in shaping perceptions, power dynamics, and socio-cultural intricacies. The example glossary, curated by the *Ecological Citizen(s)* team, offers a preliminary glimpse into terms commonly employed in discussions about design, for sustainable practices. These terms prompt the need to comprehend their nuanced meanings, potential cross-disciplinary misunderstandings, and variations in interpretation. Understanding how these terms are used and perceived differently becomes essential in fostering effective communication and shared understanding within the discourse.

Ultimately, this study advocates for an inclusive design approach that harnesses language to empower communities and individuals while driving responsible transformations in the face of challenges like the climate crisis and fostering climate justice. This article positions language and comprehension at the core of engaging diverse audiences on people and planet topics, recognising them as rational and emotional drivers. This encompasses distant futures where inclusivity, agency, and shared aims unite us all.

References

Bandura, A. (2000). Self-efficacy: The foundation of agency. In Y. B. Klusmann (Ed.), *Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer* (p. 16).

Banerjee, S. B. (1999, July). Whose mine is it anyway? National interest, indigenous stakeholders and colonial discourses: The case of the Jabiluka Uranium Mine. In *Critical Management Studies Conference (Post-colonial Stream).* https://doi.org/10.1177/1086026600131001

Brophy, C., Meth, D., Finger, M., & Brough, D. (2023). Socially responsive design education: Emerging designers and authentic transdisciplinary collaborations. In S. Haylock (Ed.), *Design education across disciplines: Transformative learning experiences for the 21st century* (pp. 33–53). Springer International Publishing. https://doi.org/10.1007/978-3-031-23152-0_3

Cahill, C., Sultana, F., & Pain, R. (2007). Participatory ethics: Politics, practices, institutions. *ACME: An International Journal for Critical Geographies, 6*(3), 304–318.

Chapman, K. (2022). Speaking to the future. *Science History Institute*.

Cooke, P., & Soria-Donlan, I. (Eds.). (2019). *Participatory arts in international development*. Routledge. https://doi.org/10.4324/9780429399190

Costanza-Chock, S. (2020). *Design justice: Community-led practices to build the world we need*. MIT Press. https://doi.org/10.7551/mitpress/12255.001.0001

Energy Observer. (2023). Cooperation in nature: One for all and all for one. *Energy Observer*. Retrieved 17 July, 2024, from https://www.energy-observer.org/

Ford Foundation. (2024, January 9). Public interest technology. *Ford Foundation*. Retrieved 17 July, 2024, from https://www.fordfoundation.org/news-and-stories/big-ideas/public-interest-technology

Frayling, C. (1994). Research in art and design. *Royal College of Art Research Papers, 1*(1), 1–5.

Gaver, B., Dunne, T., & Pacenti, E. (1999). Design: Cultural probes. *Interactions, 6*(1), 21–29. https://doi.org/10.1145/291224.291235

Godelnik, R. (2021). Designers and the fight against climate change: A design knowledge framework for the age of climate crisis. *International Journal of Design Management & Professional Practice, 15*(1), 21–42. https://doi.org/10.18848/2325-162X/CGP/v15i01/21-42

Gray, C. M. (2016, May). "It's more of a mindset than a method": UX practitioners' conception of design methods. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (pp. 4044–4055). https://doi.org/10.1145/2858036.2858410

Haraway, D. (2016). Situated knowledges: The science question in feminism and the privilege of partial perspective. In N. Duncan (Ed.), *Space, gender, knowledge: Feminist readings* (pp. 53–72). Routledge.

Heller, S., & Vienne, V. (Eds.). (2003). *Citizen designer: Perspectives on design responsibility*. Skyhorse Publishing.

Hess, K. (1979). *Community technology*. Loompanics Unlimited.

Huybrechts, L., Benesch, H., & Geib, J. (2017). Institutioning: Participatory design, co-design, and the public realm. *CoDesign, 13*(3), 148–159. https://doi.org/10.1080/15710882.2017.1355006

Ingka Group. (2023, November 23). People & planet consumer insights & trends 2023. *Ingka Group*. Retrieved 17 July, 2024, from https://www.ingka.com/projects/people-planet-consumer-insights-trends-2023/

Ivison, D., Patton, P., & Sanders, W. (Eds.). (2000). *Political theory and the rights of indigenous peoples*. Cambridge University Press.

Jagers, S. C., Martinsson, J., & Matti, S. (2014). Ecological citizenship: A driver of pro-environmental behaviour? *Environmental Politics, 23*(3), 434–453. https://doi.org/10.1080/09644016.2013.835202

Kleinsmann, M., & Valkenburg, R. (2008). Barriers and enablers for creating shared understanding in co-design projects. *Design Studies, 29*(4), 369–386. https://doi.org/10.1016/j.destud.2008.03.003

Marxt, C., & Hacklin, F. (2005). Design, product development, innovation: All the same in the end? A short discussion on terminology. *Journal of Engineering Design, 16*(4), 413–421. https://doi.org/10.1080/09544820500131169

Mayo, J. (2023). What is Cynefin? Explained. *Twinkl*.

Nuñez, D. (2013). War of the words: Aliens, immigrants, citizens, and the language of exclusion. *BYU Law Review, 2013*(4), 1517–1554.

Phillips, R., & Gant, N. (2021). Engaging design: Empowering beyond 'participation' for active engagement. *Research in Arts and Education, 2021*(1), 23–49. https://doi.org/10.54916/rae.119317

Reed, D. J., & Monk, A. (2006). Design for inclusion. In N. Stephanidis (Ed.), *Designing accessible technology* (pp. 53–63). Springer London. https://doi.org/10.1007/1-84628-365-5_6

Rodenburg, P. (2018). *The need for words: Voice and the text*. Bloomsbury Publishing. https://doi.org/10.5040/9781474273589

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign, 4*(1), 5–18. https://doi.org/10.1080/15710880701875068

Sedita, S. R., & Blasi, S. (Eds.). (2021). *Rethinking clusters: Place-based value creation in sustainability transitions*. Springer Nature. https://doi.org/10.1007/978-3-030-61923-7

Shenk, L., Franz, K. J., & Gutowski Jr., W. J. (2023). Minding the gaps: How humanists, climate scientists, and communities can become collaborating storytellers. *Environmental Humanities, 15*(3), 83–103. https://doi.org/10.1215/22011919-10746001

Simonsen, J., & Robertson, T. (Eds.). (2012). *Routledge international handbook of participatory design*. Routledge. https://doi.org/10.4324/9780203108543

Smith, A., & Ely, A. (2015). Green transformations from below? The politics of grassroots innovation. In I. Scoones (Ed.), *The politics of green transformations* (pp. 102–118). Routledge. https://doi.org/10.4324/9781315747378-7

Spinuzzi, C. (2005). The methodology of participatory design. *Technical Communication, 52*(2), 163–174.

Tham, J. (2021). *Design thinking in technical communication: Solving problems through making and collaboration*. Routledge. https://doi.org/10.4324/9781003036760

Tironi, M., Chilet, M., Marín, C. U., & Hermansen, P. (Eds.). (2023). *Design for more-than-human futures: Towards post-anthropocentric worlding*. Taylor & Francis. https://doi.org/10.4324/9781003319689

Valencia Sáiz, Á. (2005). Globalisation, cosmopolitanism, and ecological citizenship. *Environmental Politics, 14*(2), 163–178. https://doi.org/10.1080/09644010500054848

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