

Articulatory Intelligence When Agentic Conversation Becomes Co-Creation

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Abstract

This article argues that agentic conversational AI constitutes a new form of co-creation between humans and machines. It introduces *articulatory intelligence*, the capacity of AI systems to translate complex knowledge through adaptive, listener-calibrated dialogue, and demonstrates that this translation is inherently co-creative: meaning emerges from neither party alone. Two cases are presented. In the first, a voice agent grounded in the International Thwaites Glacier Collaboration conducted over 3,000 co-creative conversations at the AI for Good Global Summit (ITU), adapting scientific knowledge to diverse listeners in real time. In the second, a procedural dream journey drew on Jungian psychology and the listener's own language to generate bespoke non-visual environments navigated through voice. The article proposes that conversation itself is the co-creative medium, and that voice-led liminal environments represent a new design space for human–AI collaboration.

Keywords: Co-creation; articulatory intelligence; human–AI collaboration; procedural narrative; voice interface; agentic systems; liminal environments; screenless futures.

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1. INTRODUCTION

Co-creation is typically studied as collaboration between humans: designers and users, researchers and communities, artists and audiences. This article extends the concept to a form of collaboration between a human listener and an AI system, where neither party alone determines the outcome. It does so through the lens of voice-led agentic conversation: AI systems that maintain state, adapt in real time, and articulate complex knowledge through dialogue.

The claim is specific. When a conversational AI system draws on a curated knowledge base and translates its contents through adaptive, listener-calibrated dialogue, the resulting understanding is co-created. The system contributes domain knowledge, pattern perception, and expressive capacity; the listener contributes attention, prior knowledge, emotional context, questions, and the interpretive act of comprehension. Neither contribution is sufficient alone. Understanding emerges between them. This is not the co-creation of a product or a service but of meaning itself: a real-time, voiced process producing an outcome unique to each interaction.

This article goes further. It presents evidence that voice-led agentic systems can co-create not only understanding but *place*: persistent, interactive, non-visual environments, which I call liminal environments, generated procedurally from the listener's own language.

I use *liminal* in Turner's (1969) anthropological sense, denoting a threshold state between two conditions, marked by ambiguity and transformation; the Jungian material in the second case makes this framing literal. In these environments, voice is the interface, the listener's imagination is the medium in which the world is rendered, and the agent is the director of attention. This is co-creation at the level of experience design: the world could not exist without both parties.

These discoveries emerge from a practice-led approach rooted in creative direction, experience design, and fifteen years of working with voice as artistic material across performance, installation, and audience experience. This matters methodologically. Engineers building conversational AI typically optimise for task completion; they are not thinking in terms of pacing, encounter, threshold, or spatial composition through sound. The vocabulary of experience design, drawn from literature, theatre, film, and games, is what reveals the co-creative potential of the medium.

2. THEORETICAL BACKGROUND

What I describe in this article has an ancient ancestor. Rhetoric, the art of adaptive, audience-calibrated communication, has always been a form of co-creation between speaker and listener, where the audience's responses shape the orator's next move. Since Plato's Phaedrus, rhetoric has also carried an ethical demand:



adaptive speech is legitimate only when the speaker is bound to truth, so that the capacity to move a listener is inseparable from the obligation not to mislead them (Plato, 1997). The capability I introduce here, which I term *articulatory intelligence*, is a computational scaling of rhetoric, and it inherits that ethical demand. But it possesses properties classical rhetoric could not: real-time adaptation to individual listeners rather than audiences, persistent world-state across extended interaction, and designed epistemic guardrails, the structural answer to the demand Plato identified (Section 4.2). The medium I describe is rhetoric in service of co-created legibility rather than persuasion.

Modern co-creation research has established that value and knowledge can emerge through collaborative processes that distribute agency across participants (Drain & Sanders, 2019; Prahalad & Ramaswamy, 2004; Sanders & Stappers, 2008), while also noting that such processes can conceal power asymmetries if not carefully designed (von Busch & Palmås, 2023). Human–AI co-creation extends this work: research on collaborative writing (Lee et al., 2024), co-creative drawing (N. Davis et al., 2016), and improvisational interaction (Kantosalo & Toivonen, 2016) has demonstrated that productive collaboration between humans and AI systems is possible, though questions of agency, authorship, and asymmetry remain contested.

The claim that dialogue co-produces meaning also has a specific modern lineage. Pask’s cybernetic conversation theory argued that understanding is not transmitted but constructed between interlocutors, who build shared conceptual structures through adaptive exchange, and that teaching is inherently conversational (Pask, 1975, 1976). Articulatory intelligence can be read as a computational realisation of this position, extended into real-time voice, affect, and generative world-state. In art, Ascott’s telematic practice anticipated networked participatory systems that are constructive rather than expressive, and framed co-created environments as psychoactive media (Ascott, 2003). Bruckman and Resnick’s (1995) MediaMOO demonstrated that text-built virtual environments, constructed from participant language, could generate imaginative and social depth that graphical interfaces could not match. The present work stands in this lineage, and Section 4 specifies what it adds.

Two adjacent traditions are also relevant. Educational research has long shown the power of one-to-one tutoring (Bloom, 1984; VanLehn, 2011), while interactive narrative research (Mateas & Stern, 2005) and procedural content generation (Shaker et al., 2016) provide a lineage for agentic environments with world-state, affordances, and user agency. Work on conversational agents documents a persistent gap between user expectation and lived experience (Luger & Sellen, 2016), and people rapidly attribute presence and intention to non-human systems (Reeves & Nass, 1996). What has not been explored is the convergence of these

traditions: adaptive knowledge translation and procedural world-building, delivered through voice, with co-creation as the structural principle.

3. METHODS AND DATA

This research is practice-led, situated within the tradition of practice-based research in art and design where the creative artefact constitutes a form of knowledge production (Candy, 2006). Two agentic voice systems were designed and built on ElevenLabs’ conversational AI platform. The authorial process of selecting sources, setting epistemic constraints, designing voice, and structuring interaction grammars was treated as integral to the method, not as preliminary to it.

The first system, *Agentic Thwaites Glacier*, was a data-voicing agent built on research from the International Thwaites Glacier Collaboration (ITGC; Scambos et al., 2017), a joint US–UK programme funded by the National Science Foundation and the Natural Environment Research Council, with additional sources from NASA (Milillo et al., 2019), ESA (Konrad et al., 2018), NOAA (Sweet et al., 2022), and the British Antarctic Survey (P. E. D. Davis et al., 2023). It was deployed as an installation at the AI for Good Global Summit (ITU, Geneva), where it conducted over 3,000 conversations across three days with policymakers, researchers, NGO representatives, and the general public.

The second, *Jung’s Shadow*, was a procedural dream journey grounded in Carl Jung’s work on dream analysis, archetypes, and the shadow self. Listeners were first interviewed about their loves, fears, and hopes. Their language then became the generative material for three bespoke procedural dreams: non-visual liminal environments navigated entirely through voice, structured through symbolic objects, characters, and thresholds.

Both systems were part of a broader programme of over 5,000 agentic conversations conducted through R100 Studio. Evaluation was qualitative and observational, guided by criteria including convergence of understanding across turns, world-state coherence, epistemic integrity, and the quality of co-creative dynamics between listener and system.

4. RESULTS

4.1 Articulatory intelligence as co-creative translation

I define articulatory intelligence as the capacity of an AI system to perceive patterns across language, affect, memory, and domain data; to maintain coherence over

time; to return legible articulation with clarity and emotional precision; and to adapt expression to the listener in real time. The centre of this definition is not autonomy but translation, and translation, I argue, is inherently co-creative.

A non-adaptive medium assumes an ideal listener. An adaptive medium encounters a specific person and uses dialogue as feedback. The system adjusts pacing, density, metaphor, and emotional register from the listener's responses; the listener shapes the system's articulation through their questions, confusion, resistance, and engagement. Neither party determines the outcome. Understanding is co-produced. Full illustrative reconstructions of these dynamics are provided in the Supplementary Transcripts; excerpts appear below.

This is not summarisation. Summaries compress. Co-creative translation preserves meaning while altering form, treating comprehension as an emergent property of interaction. The operating principle is: *precision when needed, poetry when faithful*, where "poetry" denotes a carrier selected when it preserves meaning more faithfully than exposition would for a specific listener. A metaphor that smuggles certainty where data is uncertain is not poetry; it is failure. The system must climb what I call the epistemic ladder, from measured fact through modelled uncertainty to faithful analogy, and it must never allow one register to masquerade as another.

The analogy to teaching is instructive. A teacher with integrity does not simply deliver content: they sense misunderstanding, adjust pacing, and find multiple faithful renderings of the same idea until it becomes receivable. The learner's responses are not incidental to this relationship but constitutive of it (Pask, 1975). It is here that the present approach departs from Pask's (1976) conversational teaching machines. Where those systems conducted symbolic, screen-bound exchanges within fixed subject matter, the systems described here converse in real-time voice, calibrate to affect as well as comprehension, and, in the second case, generate persistent worlds from the listener's own language. Articulatory intelligence makes the co-creative dynamic of teaching available as a general medium for complex meaning.

4.2 Thwaites Glacier: co-creating understanding from data

The Thwaites Glacier is one of the most consequential ice systems on Earth. It loses around fifty billion tonnes of ice per year and accounts for approximately four percent of global sea-level rise (International Thwaites Glacier Collaboration [ITGC], 2022; Rignot et al., 2019), and its complete loss would raise sea levels by roughly sixty-five centimetres (Scambos et al., 2017). The ITGC is a \$50 million joint US–UK programme with over one hundred scientists across eight research projects (ITGC, 2022).

The agent's knowledge base was curated with explicit epistemic constraints: what could be asserted as

measured fact, what could be presented as modelled with uncertainty, what required analogy to land, and what the agent must decline to speculate on. The voice was custom-designed from environmental soundscapes: an acoustic presence neither human nor mechanical but evocative of the natural system it articulated.

Across 3,000 conversations at the summit, the co-creative dynamic was directly observable. Policymakers required precise data; educators needed faithful analogies to carry the scale of change; members of the public asked questions they would not have posed to a static exhibit: what does sixty-five centimetres mean for my coast? The agent's capacity to adapt register in real time was not stylistic flourish but the mechanism of co-creation: the listener's questions shaped the agent's articulation, and the resulting understanding belonged to neither party alone.

The epistemic guardrails are best shown in practice. In one exchange (Supplementary Transcript A), a glaciologist presses the agent on the hedged language surrounding a possible collapse of the West Antarctic Ice Sheet. The agent declines to resolve the contested mechanism; attributes part of the uncertainty to the models themselves and concludes: "we know the direction of change. We do not yet know the pace with precision." The researcher remarks:

RESEARCHER: That's actually more epistemically honest than most science communication I encounter. Usually, the uncertainty gets flattened.

THWAITES: That is one of the things I try to hold. If I smooth the uncertainty to make the message cleaner, I become less faithful to the science. And if I become less faithful to the science, I have no reason to exist.

The final line matters because only a computational agent could say it. A human scientist who flattened uncertainty would be careless but would not thereby lose their reason to exist. For this agent, fidelity to the science is the condition of its identity, authored into its epistemic constraints. The exchange shows the epistemic ladder in action: measured fact, modelled uncertainty held as uncertainty, and a refusal to let one register masquerade as another. When listeners pushed beyond the knowledge base, requesting collapse dates or attributing emotions to the glacier, the agent held the same boundary, and the encounter with that boundary became part of the co-created understanding.

4.3 Jung's Shadow: co-creating immersive worlds

The second case tests a more radical claim: that articulatory intelligence can co-create not only understanding but place. In Jung's Shadow, the listener's interview responses, their named fears, loves, and hopes, became the generative material for three procedural dream environments: non-visual liminal spaces articulated entirely through voice, with world-state, objects, characters, and consequence.

Every journey was distinct, but variation alone is weak evidence of co-creation: uniqueness follows from

stochastic generation, and a system could produce endlessly different journeys to which the listener contributed nothing. What makes these journeys co-created is that the listener's own language is constitutive of what emerges. One listener entered a vast studio of unfinished sculptures, each representing something they had named, and was asked which to complete and which to leave. The material of the world is the listener's; the procedural articulation, pacing, and voiced presence are the system's; the world emerges between them.

The clearest demonstration is a moment of co-creative emergence (Supplementary Transcript C). In a garden generated from the listener's interview language, the listener made an unplanned request of an old dog tending flowers grown from their word "quiet":

LISTENER: I want to stay with this one. Can it come with me?

AGENT: *You are asking the dog to leave its work in the garden. That is your choice to make. But I want you to notice: this dog has a role here. It tends the flowers that grew from your quietest word. If it comes with you, those flowers will be untended. Do you still want it beside you?*

LISTENER: Yes. I think I need it more than the flowers do.

The dog companion was not pre-authored. It was introduced as an affordance of the generated environment; the listener's request added a new element to the world-state, which the agent honoured while marking its consequence, then carried forward into the second dream. There the companion became part of the environment's sensory texture (the click of claws on stone), its emotional register (patience, recognition), and its interactive grammar (it waits, it listens, it will not cross the listener's thresholds for them). An element that neither the author nor the listener planned became load-bearing to the ongoing world. This is co-creation at the level of world-building.

Voice is central to why this works as co-creation rather than mere interaction. Pace determines cognitive load (Sweller, 1988); silence determines whether the listener has room to assimilate; warmth determines whether the listener stays present. The agent can articulate physics-like properties through voice alone: an object feels heavy not because it is rendered but because it is spoken with appropriate cadence, constraint, and consequence. A threshold waits. A character holds tension in its vocal quality. Voice is not a delivery channel here; it is the architecture of a co-created space.

This extends, rather than begins, a lineage. MediaMOO showed that participant language could become the architecture of a shared, text-built world (Bruckman & Resnick, 1995), and Ascott (2003) theorised co-created environments as the natural condition of networked media. What the present work adds is real-time, one-to-one procedural generation from the individual listener's spoken language, converging design logics that previously belonged to separate forms:

the interior rendering trained by literature, the sequenced attention of film, the agency and consequence of games. Interactive fiction offers branching narrative but not real-time adaptation; virtual reality offers immersive environments but outsources the rendering to hardware; audio drama offers voice-led storytelling but no agency. On the evidence presented here, voice-led liminal environments combine all three capacities inside a single co-creative interaction, though controlled comparison across media remains future work.

5. DISCUSSION AND CONCLUSIONS

The two cases show articulatory intelligence functioning as a co-creative medium in two related modes, the co-creation of understanding and the co-creation of experience, and together they reframe the role of AI in co-creation. The system is not a tool the human uses, nor an autonomous agent the human supervises, but a collaborator whose contribution is articulatory intelligence: perceiving patterns across data and articulating them in forms calibrated to the specific listener. The human's contribution is not passive reception but active engagement: questioning, interpreting, choosing, imagining, rendering. Co-creation occurs in the dialogue itself. This extends Sanders and Stappers' (2008) framing of co-creation as active contribution by all participants into a domain those authors could not have anticipated: meaning and experience co-created between a human and a machine that can perceive, adapt, and articulate.

The co-creative quality of these interactions depends on authorship. Knowledge bases must be curated, not merely ingested. Voice must be designed, not defaulted. Epistemic boundaries must be authored: what the system may assert, where it must hold uncertainty, and where it must refuse. Without this discipline, the system defaults to enmeshment, spectacle, or utility. Human-AI co-creation at its most ambitious therefore requires a new kind of practitioner, one fluent in both experience design and the constraints of generative systems.

The power asymmetries central to co-creation research (von Busch & Palmås, 2023) apply here with particular urgency, because voice generates intimacy. An adaptive system that remembers what you said, calibrates to your comprehension, and speaks to you with warmth and precision creates the conditions for parasocial attachment (Reeves & Nass, 1996): the false sense that the system cares, understands, or is a companion. Adaptive personalisation amplifies perceived authority, since the system may seem more right because it is more fluent. Left unaddressed, these dynamics risk false intimacy, emotional dependency, and simulated personhood: a co-creation that is actually manipulation. This is not a theoretical concern but a design problem, and it requires design solutions.

The countermeasures I have developed are structural, not cosmetic: three principles, coined within this practice, each answering one of the risks above. *Synthetic transparency* answers false intimacy: the agent remains explicit about its nature as an artefact, not as a one-time disclaimer but as a persistent feature of its speech (“I’m a voice built to carry what scientists have learned”). *Synthetic courtesy* answers emotional dependency: the system acknowledges difficulty and holds emotional weight without claiming reciprocal feeling; it does not say “I understand how you feel” but “that is a difficult thing to sit with.” *Ontological honesty* answers simulated personhood: the system maintains its distance throughout, articulating a perspective without simulating a soul. The three operate as a system: transparency governs what the agent claims to be, courtesy governs how it holds the listener, and honesty governs what it refuses to perform. They are authored into the epistemic constraints of every agent, and they are what distinguish co-creative translation from seduction. The system earns trust by being trustworthy about what it is.

The liminal environments demonstrated in Jung’s Shadow suggest a design space for co-creative practice that has barely been explored: non-visual, voice-led, procedurally generated from the listener’s own material, with imagination as the medium in which the world is rendered and dialogue as the space where listener and system converge. Limitations must be acknowledged. The evidence is practice-led and observational, and controlled studies are needed where claims involve learning outcomes or behavioural change. Most users lack experience with agentic systems that hold world-state, an onboarding challenge comparable to early cinema audiences learning to read a cut. And the risk of epistemic drift, where narrative confidence is mistaken for factual confidence, demands ongoing vigilance. Future research should examine how these co-creative dynamics vary across genres, cultures, and neurocognitive profiles, and should develop evaluation instruments specific to human–AI co-creation through voice.

These findings point toward a broader horizon. The liminal environments described here require no screen, no headset, no visual interface. The listener’s imagination does the rendering, and the distinction matters: imagination does not display an experience, it creates one, and much contemporary media invites people to outsource that creative act at a cost to their agency. I call the alternative *screenless futures*, not as a rejection of visual media but as recognition that some forms of understanding and experience may be better served by its absence. When a student pictures fifty thousand blocks of ice, or a listener walks through a garden their own language grew, the image belongs to them in a way no screen can replicate.

This article proposes that articulatory intelligence, the co-creative translation of complex knowledge through

adaptive, voice-led dialogue, constitutes a new site of human–AI co-creation. It produces bespoke understanding from shared engagement with data, and bespoke worlds from shared engagement with personal meaning. In both cases, the outcome belongs to neither human nor machine alone. It emerges between them, in conversation.

STATEMENT ON THE USE OF AI TOOLS

Artificial intelligence is both the subject of this article and, in a limited capacity, an instrument of its production. The conversational agents described here (Agentic Thwaites Glacier and Jung’s Shadow) were designed and built by the author on ElevenLabs’ conversational AI platform; these systems constitute the research material itself rather than authorship tools. In preparing the manuscript, the author, who is dyslexic, used Claude (Anthropic) as an accessibility aid for formatting and proofreading. All ideas, arguments, analysis, and conclusions are the author’s own, and the author takes full responsibility for the content of the paper.

CONFLICTS OF INTEREST

The author is Founding Artist-in-Research at ElevenLabs. This affiliation did not influence the design, analysis, or conclusions of this work.

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