

Dark Forest: Critiquing Online Communication in an Art-Game of Digital Monsters

Dr. Thomas Penney and Lucian Rodriguez Lovell

RMIT University

Naarm (Melbourne) Australia

Thomas.Penney@rmit.edu.au | Lucian.Rodriguez.Lovell@rmit.edu.au

Abstract

Dark Forest is an ongoing speculative and critical art-game project exploring how individuals perform, adopt and exploit language online for personal gain post Web-2.0. The Dark Forest theory of the internet describes this cultural phenomenon as a communication game, and we use it as the metaphoric basis for our game design. We see an opportunity to engage players through game mechanics with the aim for players to reflect on how they perform, exploit or engage with language online to navigate social capital. The first iteration of *Dark Forest* engaged players in an open world built in Unreal Engine 5, where they could construct tweet-like phrases and send them into a dark forest environment. Monsters and elements of the forest environment would respond in different ways to these phrases based on their implicit alignment towards the player-composed phrases and open or close pathways based on their endorsement. We hope that players understand and absorb some of the critiques made by the piece through their interaction. Players can otherwise engage with the unique world and 3D-scanned art style adopted to express the game. Future iterations of the work, based on reflection after its first showing, will streamline the design so that consequences for players are more explicit and encourage deeper progression.

Keywords

dark forest theory, internet criticism, social media criticism, art games, alt games, serious games, critical play

Introduction

In this paper we outline the philosophical intention, and process behind, our ongoing project *Dark Forest*, the first iteration of which was shown at the Australian Centre for the Moving Image's *Audience Lab* in May 2023. *Dark Forest* is a speculative, practice-based art-game investigation of the dark forest theory of the internet (Cixin, Fisher, Konior); a critical philosophy for digital communication on social media, as inspiration for its game design. [1][2][3] The project investigates whether players metaphorically understand this internet criticism through gameplay mechanics, writing and its art style and asks players to reflect on how language is constructed on social media for personal navigation and social capital.

In *Dark Forest* players navigate a forest environment built using Unreal Engine 5. Users construct tweet/X-style phrases in a virtual handheld device to 'chirp' into the forest.

Monsters, here referred to as *Netizens* and living parts of the forest environment, designed with plasticine and 3D scanned into the Unreal Engine world, have different preferences and allegiances. Players can experiment with the different kinds of phrases and language they used to construct their chirps to open different locations and progress their exploration.

Dark Forest Theory (of the Internet)

In game theory, a "sequential and incomplete information game" is one in which no players are aware of all available information [4]. In Greg Bear's science fiction novel, *The Forge of God* (1987), humanity is likened to a baby crying in a hostile forest [5]. In this forest, humanity cries into the environment, wondering why nothing answers, but at the same time not knowing that its cries will draw predators (alien entities) that will consume it.

In Liu Cixin's novel the *Three-Body-Problem* (2014) and sequel *The Dark Forest* (2016) this idea is expanded to a set of hypotheses summarised as "cosmic sociology"; where intelligent life in the universe will be pitted against all other life in the struggle for survival [6].

The Dark Forest Theory of the Internet applies this general concept; that humanity is crying into a potentially hostile universe with a lack of information in a communication game; scoping it from a cosmic sociological philosophy to human communication itself. In this philosophy, humanity's online social universe is the dark forest where predator and prey exist, and people write/tweet themselves into existence through varying degrees of curation, savviness and performativity. People interact with each other as individuals or in ideological swarms; arguing with, cancelling and tribally clashing with each other ad infinitum.

Earlier reflections on the internet, such as Sherrie Turkle's in the 90s, describe it as a space to (anonymously) perform uniqueness and experiment with identity representation [14], but Konior, who is expanding Mark Fisher's [2] critique, articulates the contemporary internet in line with a post-internet approach as generic and banal yet simultaneously survivalist, brutal, hyper-capitalist, individualistic and nihilistic; explicitly requiring a form of fixed 'self' as a vertex or node upon which data about an individual user coalesces [15]. These crises of communicating identity fuel the story of Web2.0; "which rests on two axioms. First, sociality is a primary human need, communication is necessary for

survival. Second, sociality is the carrier of all human conflict.” [3]

Over the last ten or so years, the social internet has become a space where we have moved from expressing ourselves in a free and uncensored way within the affordances of various vernacular digital creative platforms (Myspace, Facebook, Twitter/X, Instagram, 4chan, etc), to a space where social capital is carefully achieved through the manipulation and performance of both the aesthetic and political elements of language in shared social digital spaces, while the uncensored ‘self’ exists elsewhere, setting up a balancing game around such performativity:

“The dark forest theory of the internet is about the risk tied to the very passport we need to enter our everyday cyberspace: communication, screening the self, telling the truth about ourselves, revealing or concealing our coordinates.” [3]

A broad application of this shift might describe that in early social media, we may have freely produced content that is unknowingly *problematic* on a given platform, with a more closed awareness of our audience, that in later social media is *cancellable*. The trauma of having been cancelled, micro-trauma from tense online exchanges, or paranoia that one *might* become cancelled, leads to a hyper vigilance in public online spaces, and has led to generational shifts towards a reluctance to post personal events and information [12], preferring to mask in the dark forest of tweet or status-update style platforms.

Thus an anxiety around presenting a specific and perfect self becomes the internet’s new guiding paranoia; setting a constructed version of oneself into the social word that is *true* against paranoiacs who believe an ulterior version of ourselves to be *true*: “what does she really think; but who are they, really, underneath, unbeknownst to themselves[?]” [3] We defend against these instances of potential misreading through endless “self-disclosures and declarations so that there is *no doubt* about the intentions of the other, or our own.”[3]. Just like in Liu’s “cosmic dark forest, those who speak up gamble with entropy, attract eyes, provoke attacks. Others focus on pre-emptive strikes: attack before they attack you.” [3].

The above reflections set up a world that enables different kinds of players in this game of social conflict and capital, such as gatekeepers, clout-chasers, trolls, shitposters, band-wagoners, admins, influencers, incels, and many more.

In *Dark Forest* we seek to create a playable world where language is players’ navigation tool, and the challenge is to balance what is revealed or not revealed through the player’s use of such language. Exploration of the world necessitates manipulation and mastery of what to say at what time, and to which netizens, to progress status and explore the *Dark Forest* game world.

The Design Pillars of Dark Forest

Dark Forest seeks to mechanically explore the above propositions through play. *Dark Forest* is situated in a broader tradition of “Art Game” practitioners, a community that

crosses video game design and art disciplines [7]. In this tradition, game design is often informed by the artist’s values and critical voice, with these critiques communicated through humorous mechanics or rules, subversive world design aesthetics, and written provocation and discourse between the artist and player. These concepts are exemplified by practitioners such as Theo Trian, Cao Fei, Bennet Foddy, Pippin Barr and Patrick McMahon. [17] [18] [8] [9] [10] By playing Art Games, audiences make realisations in the safety of the game-world, provoking reflection on their own worlds as a form of critical play. [11] Three design goals or pillars were established for *Dark Forest*, in reference to this tradition:

- **Vulnerability (a Dark World)** – The game world would be steeped in darkness to make the player feel lost and vulnerable. It would utilise a unique 3D scanned plasticine aesthetic to reflect fantasy and horror references, to tease exciting characters and spaces to reveal through exploration.
- **Exploration (Communication as Progression)** – Players’ primary interactions with the game world would be through the construction of *chirps* (tweets) on a smartphone like device. Players would tune the language of their messages to the unique groups that inhabited the forest to achieve progression through the open world space. Different paths would lighten/darken or open/close when different monsters from different communities liked/disliked different chirps allowing players to progress. Through this feedback, players would develop mastery over using language to achieve their exploration goals.
- **Language Mastery (Caricaturing Twitter)** - Each forest inhabitant group would loosely align with real-world stereotypes, responding to different language aesthetics with varying degrees of affection or animosity. The player constructed messages that humorously caricatured real-world styles of online engagement. This used humour to both engage and distance the player from reality so they could reflect on real political dynamics without the pressure of real political consequences. The aim is for playful game mastery to translate into this reflection on everyday use.

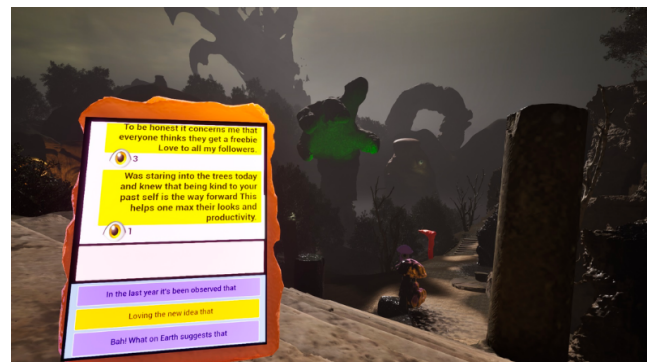


Figure 1 – View of game world with the smartphone-like device and player-composed chirps from chirp snippets.

Vulnerability (a Dark World)

Darkness was constructed in the forest both literally and through fantasy-horror reference. Via lighting, darkness was used to make the player feel vulnerable, an environmental affordance that could be used to restrict the amount of information the player receives, forcing them to use the only interface at their disposal (a smartphone like device) to chirp into the forest to slowly expand the picture of what lies ahead. The virtual environment was only lit by dim moonlight filtering through the trees.

Through the act of *chirping* (posting into the forest), the player could trigger a light emitting response in the limbs of the forest, and the bodies of its' inhabitants. The resulting glowing beacons created a breadcrumb trail that the player could follow through the forest to the 'core' environments of each inhabitant or *netizen* community.

Netizens represented different caricatures of real internet communities which we elaborate on later. The persistent environmental obstacle of darkness would constantly drive the player to communicate, search for a response, move, and recalibrate.

3D Scanned Monster Design

The design of monsters in this space utilised Unreal Engine 5's Nanite, Lumen, and Physically Based Render Shaders (PBR) technology to easily render complex 3D scanned plasticine models we had created and digitised in a Matter and Form 3D tabletop laser scanner. The models were inspired by 80s Jim Henson films such as *The Labyrinth* (1986) and *Dark Crystal* (1983) as well as the eyeball-centric dungeon and boss design of monsters in *The Legend of Zelda* (1986-today) and *Metroid* (1986-today) series.

In reference to these games and to the dark forest theme of awareness of being seen in a communication game, giant eyeballs dotted the world like growths, representing other users in the forest/internet. They were programmed to subtly acknowledge your presence with a winking blink but increase their attention to a piercing stare based on their alignment to the chirps players posted. They acted as a motif for gaze in online spaces, where one is perpetually observed and incentivised to relentlessly communicate for attention.

Organic arms and legs protruded from trees and cliffs, becoming gestural guides of the forest. Like the eyes the limbs could writhe in response to your presence, but also acted as organic signposts, funnelling players towards netizen communities if their associated bodies endorsed players' chirps.

The guiding limbs alluded to users in online spaces becoming part of the channelling algorithm, growing their group or cultivating an algorithmic intensity by directing attention inwards, or dissuading entry to certain communities through gatekeeping tactics. The netizens themselves take part in this behaviour but selectively respond based on their own mock-political affiliations.

The material and technical art design of the monsters reflected the power of Nanite and Zbrush technology and used a custom PBR shader that simulated a glossy, wet, skin-like colourful surface with subsurface scattering (light bleeding through the objects). Nanite and Lumen easily rendered

complex 3D scanned objects, where used as static landscape features, without requiring a Zbrush low-poly conversion, making a direct-from-scan workflow easier than ever before. Zbrush was used to simplify meshes and create UV and normal mapping for 3D scanned characters where they required movement or animation.



Figure 2 – Examples of plasticine models digitised in-game by the Matter and Form scanner (character top left image and tower top right). Rendered with Nanite technology in game with PBR shaders alongside other 3D scanned landscape and monsters (bottom image).

Exploration (Communication as Progression)

Confronted with limited information of their surroundings, players' primary interactions with the game world are through movement and the construction of chirps, which represent tweets (Twitter/X). By slowly tuning their use of language to please certain netizen affiliations, players could achieve mastery over obscured space, and in doing so symbolically demonstrate mastery of a system of politics and information, depending on where players ended up, be it within a very specific community forest area, or within the 'averaged-out' centre of the world.

Constructing Messages and Receiving Reacts

The system that enables this central interaction has two main components; the smartphone which the player can use to craft their chirps, and the receiving network of the forest which comprises of digital instances that register these chirps and determine reactions of monsters/eyes/limbs based on their alignment.

The smartphone is a fleshy device, an organic extension of the player's body, which in this iteration of *Dark Forest*

contains a single application for chirping. The phone also provides a local source of light, somewhat like a smartphone torchlight. Players can construct chirps by selecting up to four sentence snippets from a randomly refreshing library, akin to making sentences from fridge magnets (Figure 3). The snippets are originally written by the artist (they are not user generated at the outset), and form a database (Figure 4), containing phrase, sentence position (start, middle, or end), and an association with a netizen group. These associations are obscured on the players UI, however based on the percentage makeup of the entire player constructed chirp, the forest and netizens respond accordingly. The strength of the forest response was communicated through eyeball reactions on the phone display, and environmental reactions in the monsters that we have described above. Future iterations of Dark Forest might replace the random sentence construction system with a large language model conversational system, sampling language from the existing phrase library.

Exploration of Spatial Design

The spatial design of the forest was informed by imagining different social media communities as tangible spaces or psychogeographies [11] in the forest. A system of major forest zones was established, inspired by theme park and 2D maze designs, each zone was aesthetically delineated, reflecting the character of each netizen group.

Connecting these primary zones was a web of obscured corridors that the player would be funnelled towards, reflecting how users become algorithmically pushed to new online spaces in response to their communications; especially how users compound their own identities through the repetition or refinement of aligned communication online.

Supporting the players’ spatial orientation in the forest, was a skyline silhouetted by a host of mega-structures, such as looming dark towers and giant hands. This design approach was informed by the combined traditions of open world or ‘open field’ [13] and Metroidvania [16] game design such as *Zelda: Breath of the Wild* (2011) and *Elden Ring* (2022). At the centre of the forest was a glowing plateau nicknamed “utopia”, which a player could only access by ‘averaging out’ their communication across all types of netizen community without going deep into any. This central target not only functioned to keep the player moving around in a spoke like fashion until they had visited each habitant city, but also as a critique about the nature of masking in the Dark Forest theory of the Internet; in order for digital-social mobility one might need to master language without displaying the commitment of appearing too embedded or specific.

Language Mastery (Caricaturing Twitter)

In our first iteration of *Dark Forest*, monsters were aligned to one of four community groups; the Astrobaes, Grumblenugs, Lovekins or Senselords. These are loosely aligned with real-world aesthetic-political online stereotypes. The process of authoring the chirp snippets (short segments of sentences written by the artists) that would combine (by the

user selecting these sentence segments) into the chirps associated with each alignment required care; the intention was not to create a glaringly political work that would send up any real-world group. The intent is rather to get players to focus on the mechanics of their interaction, using these semi-subtle ‘types’ of phrasing as a guide, with enough reference to the existing zeitgeist to form a scaffold for engagement. The other genuine aim is for it to be funny! So, there should be enough of a reference to real world communication for that subversive attitude to come across without it being too bland - it needs some ‘bite’ to it and should not be entirely sanitised - this is a careful balancing act for critical and subversive design in 2023.

For example, *Grumblenugs* employ largely negative superlative ‘boomerspeak’ or ‘Trumpian’ phrasing without referring to any real-world events, people or symbols. *Astrobaes* loosely reflect queer-left progressive phrasing, *Senselords* reflect masculine ‘rational’ types that are into self-improvement and optimisation and *Lovekins* allude to well-meaning wellness influencers.

In each case, the language is more about the style or cadence of phrasing than the content or ‘nouns’ of the phrase. Players were not explicitly given any indication of whether phrase snippets they selected were aligned with any group; we left this up to players and have yet to decide how to increase this visibility through meaningful feedback. Players expressed that they tried different combinations of phrases to see if they would illicit different reactions in the environment and found this an engaging task for themselves.

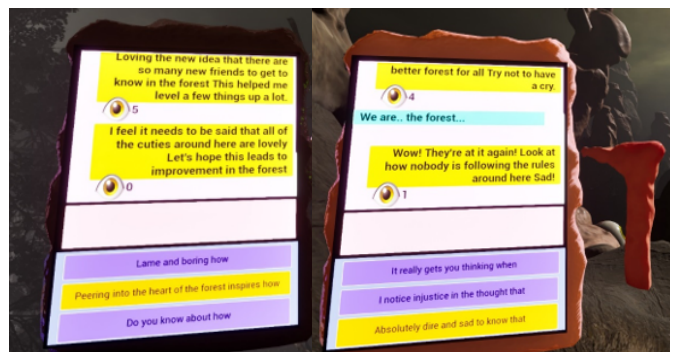


Figure 3 – Two examples of different phrases composed in the chat system, with eye reacts indicating nearby forest elements responding to the content.

Phrase_11	Absolutely dire and sad to know that	Beginning	Grumblenugs
Phrase_12	Wow! They're at it again! Look at how	Beginning	Grumblenugs
Phrase_13	Disgusted quite frankly at the news that	Beginning	Grumblenugs
Phrase_71	some chirpers are having their voices silenced	Middle	Astrobaes
Phrase_72	we don't get to have nice things	Middle	Astrobaes
Phrase_73	not everyone's story is being told	Middle	Astrobaes
Phrase_74	inequality is astonishing right now around here	Middle	Astrobaes
Phrase_75	I can't participate freely and openly in this forest	Middle	Astrobaes
Phrase_76	more diverse denizens produces a better forest f	Middle	Astrobaes

Figure 4 – Examples of beginning phrase snippets for Grumblenug-aligned Monsters (above) and middle phrase snippets for Astrobae-aligned Monsters (below).

Reflections on the Design of Dark Forest

The public exhibition of *Dark Forest* at ACMI Audience Lab 2023 allowed us to gather information about the work-in-progress through informal play testing, usability observation, and audience feedback. We found that players engaged with either a) the aesthetics of the world or b) the language system of the game but didn't conceptually merge the two in this first iteration.

In the case of a), players preferred to admire the aesthetics of the environment and design of the monsters while moving around independently and only chirp out a few sentences. In this case players also enjoyed identifying which physical plasticine objects we had brought in to decorate our station had been 3D scanned into the world.

In the case of b), players preferred to engage with the social media system: they would stay still, ignoring the open world, and construct humorous phrases; reverse-engineering which netizens would react to which linguistic aesthetic but without much exploration.

This observation suggests that whilst separately functioning and worthwhile, the link between world design and the social media system was not made mechanically explicit. Additionally, the feeling of vulnerability we endeavored to elicit was not felt by players; there was no perceived consequence to writing messages; the forest was additionally not *dark enough* for players to solely rely on chirping for navigation as we wanted to show off our own 3D artwork too much.

Future iterations of the project will focus on scaling down the world, so that the connection between social mechanics and the world of dark forest might be elucidated. We will move away from the resourcing challenges of designing a very open world, to designing a smaller artistic experience where relationships between chirp system, monster community and exploration via language progression can be made more explicit and thus more effective as a real-world reflection and conceptual tool.

Colleagues in the local academic game design and serious games community at the event also encouraged us to consider this as an educational tool; which we think would move closer towards a paired back and simplified design.

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