

Mapping Our Digital Menagerie: A Monster Manual for the Megadungeon

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Abstract Relying on a comparison between the complex spatial organization of our current digital ecosystem and the ones from dungeons in role-playing games, this article analyzes the multiple entities that populate our computers, smartphones and video game consoles. Trolls, bugs, worms, conversational AI agents, NPCs, daemons, ghosts, Trojan horses and others are presented and discussed with a focus on their different degree of agency, ranging from human-controlled to having a certain degree of autonomy. By addressing how we coexist with such beings, this paper contributes to the nascent field of digital folklore.

Keywords Digital folklore. Monster. Megadungeon. Agency. Digital culture.

Summary 1 Introduction. – 2 Mapping the Digital Menagerie. – 3 Abstract Entities. – 4 Emergent Beings. – 5 Digital Janitors. – 6 Everyday Companions. – 7 Reflecting on the Monster Manual.



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1 Introduction

Bulletin board discussions,¹ video games, debate and flame² wars in forums and newsgroups, peer-to-peer file sharing, internet memes, ASCII art³ and fanfiction,⁴ the blossoming of specialist online encyclopedias, Pokémon hunts in our city streets. Researchers from fields including Science & Technology Studies (STS), media and communications, anthropology, and linguistics have explored the range of practices and platforms enabled by the advent of the personal computer, and subsequent mass diffusion of the internet and mobile devices. From early in the development of new media, researchers have probed the practices created by these new information and communication technologies (Manovich 2001), exploring the varied spatialities of our digital socio-technical complex.⁵ Such efforts have given rise to various megastructure metaphors; as, for example, in Bratton's use of the 'Stack' to describe the digital complex's gigantic organization, a layering of computational systems: user, interface, address, city, cloud, Earth (Bratton 2016). Another such metaphor is the 'megadungeon', which extends the repertoire of geospatial forms describing the vast hybrid complex produced by intersecting computational and socio-technical systems (Berti, de Seta, Fischer 2022). This term conjures phantasmatic visions of an enclosed space sometimes underground, sometimes in a built environment, containing multiple encounters. Inherited from the 'dungeons' of role-playing and video game cultures, in this context, the dungeon is a mysterious, quasi-infinite setting for collective adventures, rather than a series of underground cells in

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1 Bulletin board systems allowed people to connect to a server with a terminal program in order to read news, exchange messages with others through public message boards and sometimes direct messages, as well as upload/download data or software.

2 Flame wars are exchanges of angry or abusive messages between online users, often attributed to the lack of social cues or accountability compared to face-to-face communications.

3 ASCII art is a graphic design technique that consists of pictures pieced together from the printable characters defined by the standard from the American Standard Code for Information Interchange, a character encoding standard for electronic communication.

4 Fanfiction is fictional writing written by amateurs, unauthorized by, but based on, existing works of fiction. Although fanfiction existed before the popularization of the Web, it found a mass audience online.

5 Addressing, for example, digital networks (Castells 1996), cartographic representations (Dodge, Kitchin 2000), or the circulation of common spatial metaphors (Jamet 2010; Markham, Tiidenberg 2020). Others have critiqued simplistic oppositions of the real/virtual (Shield 2005), stressing the importance of not neglecting the material dimension on which online practices are based (Blum 2012; Parks 2015), and the legal and political facets of digital infrastructure (Zittrain 2008).

which prisoners are held (as explored by Bishop 2019). In this respect, the ‘megadungeon’ of our digital ecosystem is a spatial metaphor reflecting the networked configuration of online worlds. As the authors who coined this idiom describe, the megadungeon is a “vertical multi-level labyrinth of interconnected passages that plays a central role in worldbuilding” (Berti, de Seta, Fischer 2022), reflecting the links between network nodes, be they hyperlinked web pages, chatrooms or virtual rooms in an online world. The term also allows us to describe a new, computational dimension of the contemporary dungeon: its spatial configuration produced by algorithms, which can produce a potentially infinite variety of such structures.

Metaphors of the Stack and the Megadungeon underline the growing complexity of online spaces, following developments in digital interfaces, data analysis, the efficiency of communication networks, and increasing computing power. Digital social networks, persistent virtual worlds and the many tools that enable us to spend time online are constantly acquiring new functionalities. Among these, a growing presence of automated functions and persistent autonomous agents that continue to exist, even in our absence, form new conditions of our digital life.

In role-playing games (RPGs), dungeons are synonymous with encounters, sometimes with sympathetic characters and potential allies, but also with creatures that are often difficult for the players to discern as alien. The dungeons of RPGs and online games are inhabited by a variety of fantastic entities, from famous dragons to laughing wizards with flying pets, to the gelatinous cubes and low-level trolls described in the *Dungeons & Dragons (D&D)* fantasy role-playing game’s ‘Monster Manual’. Modeled on “medieval bestiaries”⁶ (Švelch 2013), this compendium became an archetypical template for documents shared across various games, digital or otherwise; a generic term designating any catalog of monstrous beasts and potential encounters. Such a bestiary begs the question: which entities populate *digital* megadungeons? How do they manifest? What would a megadungeon monster manual include?

Think of chatbots and other virtual agents, non-playable characters (NPCs) and their sprite representations, viruses and bugs in our machines, oracles like Google Search and Bing, LOLcats, powerful abstractions like Large Language Models and even the trolls that populate social networks. Investigating these creatures is an interesting corollary to describing the ‘new digital volumetries’ of the megadungeon. Grasping the diversity of such entities, understanding

⁶ Popularized in Europe in the Middle Ages, bestiaries were illuminated manuscripts that compiled descriptions of animals, both real and mythical, often including detailed illustrations and moralistic or allegorical interpretations.

how and where they manifest, and appreciating their configurations of agency are important in understanding how the megadungeon is not an empty infrastructure, but a teeming ecosystem, and a vital backdrop to everyday lives lived online.

This task is all the more pressing considering how so much of the attention given to technological entities has focused on robots and other physically-embodied creatures - which are often prototypes (Honda's Asimo), expensive consumer products (Sony's Aibo) or machines designed for military or police applications (Boston Dynamics' Big Dog). Leaving aside these creatures, my intent is to focus instead on the less-described digital denizens of the megadungeon, whose limited attention from researchers is out of step with their presence in our digital daily lives. Without aiming for an encyclopedic treatment of such a subject - as in the multitude of works about such creatures in various folklore or role-playing communities - this article asks what these digital entities are, in concrete terms, for those who live alongside them; their creators and users, and those who suffer their presence. Drawing on academic and popular literature describing such creatures, I propose a mapping, and reflect on some of the categories that can meaningfully describe their different facets and qualities.

However, it is not my intention to compile a bestiary that simply catalogs descriptions of various creatures. Instead, the idea is to propose a classification to help organize our understanding. While I take into account advanced technologies, such as recent generative AI techniques, my primary goal is to characterize these entities and highlight their presence in our everyday lives. This is why I chose the term 'menagerie' to describe these creatures; an expression designating a collection of rare or exotic animals kept in captivity so that they can be viewed by the public. For even if I am interested in the proximate, almost domestic, character of these entities, the fact remains that they are stranger than everyday animals, and there are still connotations of exoticism and curiosity to encounters with viruses, LLMs, bugs, Pokémon or recommendation algorithms.

This work adopts a digital folklore approach, after Gabriele de Seta, addressing "online contents, interactional scripts, and communication genres that seemed as trivial and mundane as they were fundamental and central to the everyday use of this new medium" (2019, 168).

My investigation of the digital menagerie supplements the approach theorized by de Seta: not just capturing the vernacular or memetic creativity of users of digital technologies, but also apprehending the animate beings that surround them; with the intent of understanding how we encounter them in ordinary, everyday life.⁷

⁷ This work is part of a wider research effort, described on the Machine Mirabilia weblog: machinemirabilia.wordpress.com/.

The next section describes my approach to mapping this digital menagerie, reflecting on related work and the notion of the Monster Manual in the role-playing cultures from which the megadungeon derives. This is followed by a closer analysis of four identified sub-categories of digital entities ('abstract entities', 'emergent beings', 'digital janitors', and 'everyday companions'), and concludes with a reflection on the broader implications of this work.

2 Mapping the Digital Menagerie

Although this article focuses on denizens of the digital megadungeon, it echoes other, earlier attempts to bring order to digital entities. In contemporary anthropology, for example, there have been various efforts to clarify the character and properties of digital creatures, but most such efforts have focused on robots and Artificial Intelligence (Grimaud, Vidal 2012; Becker 2023). Comparing digital entities with other objects in the world, such as ritual masks, figurines, musical instruments or automata, these works demonstrate how such entities possess symbolic properties, yet are distinguished from other objects by the interactions they make possible.

For anthropological researchers, while there may be a tendency to attribute personality to conversational agents or AI systems, exchanges with these entities differ from interactions with a fellow human, or the bonds that are built with invisible entities, such as ghosts or gods - though we should not neglect the presence and role of technicism in specific cultural contexts (Jensen, Blok 2013). Motivated, perhaps, by an implicit desire to avoid reproducing the cognitive gestures of earlier folk studies, the resulting works do not aim to describe or categorize such entities, but focus, more generally, on their ontological status, agency, or the kinds of behavioral attributions they elicit.

Within STS, we find attempts to name and classify different digital entities, particularly those that fall within the register of the monstrous (Aanestad et al. 2018; Douglas-Jones et al. 2018). This qualifier is generally employed to "consider the 'ontological liminality' that is part of making monsters: the ongoing question, what are they?" (Douglas-Jones et al. 2018, 178), and to understand the effects of the differences represented by entities described as monsters, as proposed by Donna Haraway (1992). By listing and describing beast metaphors encountered in a project on digitization processes in Denmark, Douglas-Jones and her colleagues resurrect the bestiary format - and its epistemic practices of naming, describing and classifying - as a way of narrating anxieties, and exploring those sites where digital monsters are made.

In this contribution, I would like to focus as much on this process of naming and classifying as on the nature of digital creatures for the people who live alongside them. To this end, I have compiled a

corpus of entities whose existence relies on contemporary information and communication technologies. These include those entities mentioned by participants in my investigations into smartphone use (Nova 2020; Nova, Bloch 2020) and the artificialization of the world (Nova, Disnovation.org 2021), and those from a systematic survey of documentary resources found online and in print: including academic articles and historical references from computer science and human-computer interaction, articles in the general press, discussions on forums, blogs or social networks, extracts from programming manuals and tutorials, and the descriptive efforts proposed by dictionaries and encyclopedias produced by users, such as the Jargon File⁸ or platforms such as *Fandom* or *Know Your Meme*. Terms were registered either through direct observation of user surveys or design documents, or synthetic reports in vernacular compilations of cultural practices, such as dictionaries and lexicons.

By analogy with the bestiary, from this corpus, I have included as an 'entity' any mention of an agent meeting the following criteria:

- embodiment in basic software on a computer, smartphone, tablet or game console; for example, an individual name (Bob, Clippy, Siri, ChatGPT) or, failing that, named category of entity (troll, virus, LLM, norns) accessible via a physical interface, or text or voice command. Note that this representation can sometimes exist visually, as in the case of video game characters (avatar, sprite) or more or less complex depictions (game of life);
- agency, with the entity performing actions or tasks with consequences for its environment, as generally expressed through an action verb or visual representation: Siri can provide the time and answer simple questions, ChatGPT generates text, a troll produces frustration by polluting a conversation, a LOLcat circulates, NPCs mill around in massive multiplayer games;
- a minimal presence in the discourse and practices of technology users, such that the entity is familiar to more than just a restricted circle of people.⁹

This compilation provided a corpus of 56 entities, excluding robots (Roomba, AIBO, Pepper, Nao, etc.) and historical automata

⁸ The Jargon File is a glossary and usage dictionary of slang used by computer programmers. Originally made of terms used in North-American universities and research institutes in the mid-1970s, it was published in book form in three editions as *The Hacker's Dictionary*, edited by Guy Steele and then by Eric S. Raymond. The collection evolved until 2003, including terminology from the internet and Web subcultures of the time, according to its last entry modification: <http://www.catb.org/jargon/submissions.html>.

⁹ Practically, I selected only those that featured in descriptive documents (press, historical articles), online discussions, or field surveys.

(Vaucanson’s Digesting Duck, the infamous Mechanical Turk, the Euphonia talking head). Using content analysis and inductive reasoning, I compared these multiple beings to distinguish several categories, which, in turn, were organized into distinctive axes. From these possibilities, I selected two axes to structure the corpus,¹⁰ establishing a visual summary of a possible Monster Manual of the megadungeon [fig. 1]. The first axis maps the different entities’ notoriety among users (horizontal axis in figure 1), beyond the minimum threshold for inclusion (i.e. their presence in non-technical documents and discourse). The second axis describes the degree of autonomy considered, depending on whether the entity’s agency is wholly human, delegated to a computer program, or emergent from machine-learning algorithms or other AI techniques (vertical axis in figure 1). Crossing these two axes, as in figure 1, reveals a ‘monster map’ comprising four major groups, which I have named – ‘abstract entities’, ‘emergent beings’, ‘digital janitors’, and ‘everyday companions’ – in an effort to characterize the different entities.

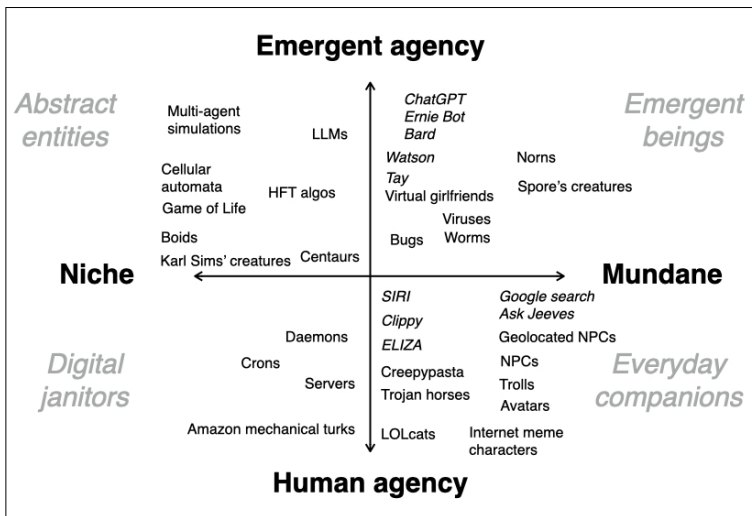


Figure 1 A map of the various entities of the digital megadungeon. Individual entities (e.g. ChatGPT, Tay) are italicized

The simplicity of this 2×2 matrix is not just a question of methodology, or a strict structuralist framing. Instead, it is intended as an echo of the systems and models employed in role-playing manuals,

¹⁰ Having rejected axes based on technological complexity or sophistication, and time (recency of origins).

as suggested by the megadungeon metaphor; in particular, classic *D&D* alignment charts, which are a common trope in this cultural universe.¹¹ This map gives an overview of the diversity of creatures we encounter through our smartphones, computers, video game consoles and other digital devices. Organized along the two axes, the map provides a kind of visual compass, clustering entities that are often considered individually, through a digital menagerie. The following sections describe the four identified categories, illustrated with examples from the corpus.

3 Abstract Entities

The first section of this map concerns the little-known entities of the megadungeon (the ‘niche’ section of the horizontal axis) whose behavior is not purposefully programmed into the system but emerges from its interaction with others and the environment (the ‘emergent’ section of the vertical axis). This category corresponds to the many experiments, computer models and prototypes developed in private and public research laboratories since the invention of the computer. Rooted in a context removed from everyday digital use, the common quality of these entities is their abstraction. Even if they have a name and recognizable behavior, their intrinsic complexity can make them seem enigmatic. Often lacking a clearly defined purpose or functionality, they are usually created as a demonstration of technical possibilities, or the simulation of an existing linguistic or behavioral process. Their abstract nature gives rise to fantasies: anger, fear or over-enthusiasm regarding their autonomy, calls to slow down research, and so on. This can be seen in the term ‘Artificial Intelligence’, which I have chosen to exclude from my corpus because of its overly general connotations, even though it is often used to designate a single entity.

In this first category of the monster map, different examples can be distinguished, depending on the degree of abstraction of the entities considered. Consider the simple mechanism underpinning the visual configurations of Conway’s *Game of Life*, a cellular automaton devised in 1970 by the British mathematician John Horton Conway. On a two-dimensional universe, a square grid contains cells that are

¹¹ In *D&D*, alignment is a formulaic categorization of the ethical and moral perspective of player characters, non-player characters, and creatures. It is often represented as a matrix with a two-dimensional grid that separates characters into nine alignments, based on their moral and ethical beliefs: lawful good, neutral good, chaotic good, lawful neutral, true neutral, chaotic neutral, lawful evil, neutral evil, and chaotic evil. As a way of categorizing players’ characters, alignment charts help to determine how a given character should behave.

either alive or dead, with each cell's behavior determined by the state of its eight immediate neighbours (e.g. 'a live cell with zero or one live neighbours will die', 'a live cell with four or more live neighbours will die'). Different patterns appear on the grid, generated by the rules. Each pattern ('block', 'beehive', 'toad', 'beacon', 'glider', etc.) corresponds to a specific entity in the game's universe. Some of the earliest computer-based entities, these life-like configurations described as "fantastic combinations" (Gardner 1970), attracted growing attention, with people continuing to discover new patterns, such as the 'knightship' in 2018. Similarly, other Artificial Life¹² programs, such as the Boids ('bird-oid object') developed by Craig Reynolds (1987), or Karl Sims' "evolved virtual creatures" (1994), illustrate the different capabilities envisaged for digital entities in a 3D universe, from reproducing the swarming behavior of birds, to learning locomotion.

On the other side of the Artificial Life spectrum, with a much more elaborate complexity and due to their novelty, Large Language Models (LLM) such as GPT-4, LLaMa, or BLOOM form another type of abstract entity of this Monster Manual. Developed using artificial neural networks, and (pre-)trained on large amounts of data, mostly scraped from the public internet, these models are used to solve various tasks, including generating text, translation and solving problems.¹³ Although the behavior of these entities is a form of emergence, based on an aggregation of different kinds of content, they are not truly autonomous. Their functionality relies on a series of human agents, who are paid to train, verify and sometimes imitate them (Tubaro, Casilli, Coville 2020).

High-frequency trading algorithms (HFTs) are another type of abstract entity, which has gained greater recognition among the general public over the past decade, due to their presence in the press, and connection with the turbulence of the financial markets. This category of sophisticated algorithms corresponds to trading systems characterized by high speeds and turnover rates that leverage high-frequency financial data and electronic trading tools. Posing new challenges to the financial system, these algorithms go by different names ('Iceberg', 'Dagger', 'Monkey', 'Sniper', 'BASOR') reflecting the obsessions of their designers. Nevertheless, they remain discreet, appearing only episodically in the media, business press publications (Ablan 2007), or in books by researchers in the humanities (Laumonier 2014).

12 Artificial Life is a field of study that appeared in the 1980s, wherein researchers examine systems related to natural life, its processes, and its evolution, through the use of simulations with computer models, robotics, and biochemistry.

13 AI conversational agents like ChatGPT, that I will discuss in another section, are distinct entities, since they rely on certain LLMs, like GPT-4.

Finally, as a possible intermediary between emergent behavior and human agency, the centaur is a particularly interesting example of an abstract entity. Named for the half-human, half-horse creatures of Greek mythology, this refers to a combination of human and ‘artificial’ intelligence, or, more concretely, a human-machine team, whose chess performance outclasses not just people but also the most powerful Artificial Intelligence systems (Xerox PARC, 2017).

4 Emergent Beings

The second category on the monster map, ‘emergent beings’, owes its name as much to these entities’ high profile as to their unpredictable behavior, a source of surprise and fascination for users of computers, smartphones and video game consoles.

Conversational agents and text generators fall into this category, demonstrating varying levels of complexity and conversational ability. ChatGPT (OpenAI), Ernie Bot (Baidu) and Bard (Google) are the best-known among such entities, following earlier bots such as Watson (IBM). The LLMs that underpin these agents enable them to construct coherent discourse, effectively mimicking style, detail and language diversity. This was less true of Tay, a Twitter chatbot released by Microsoft in 2016, which was rapidly suspended after producing a series of offensive postings, following inflammatory messages sent to it by certain users eager to make it learn racist and sexually-charged insults.¹⁴ This category also includes ‘virtual girlfriend’ (and more rarely ‘virtual boyfriend’) applications such as PicSo.ai, KARI (Knowledge Acquiring and Response Intelligence) and Replika. Using less sophisticated machine learning techniques to replicate an apparent love relationship using specific conversation scripts and visual interactions, they question notions of intimacy and identity (Pettman 2009).

Some video game characters meet the requirements of this category of agents, displaying emergent behavior. Consider the simulations used in Artificial Life projects, such as the *Creatures* video game series (Millennium Interactive/Mindscape). Published since the 1990s, these games allowed users to interact in real-time with Norns, synthetic agents inhabiting a closed environment, with their own simulated biochemistry, haploid genetics, and neural networks (Mackie 2009). Among the multitude of Artificial Life simulations that have found a commercial outlet, 2008 real-time strategy game *Spore* (Maxis/Electronic Arts) tasked players with controlling the evolution of a

¹⁴ One could also consider Xiaoice, developed by Microsoft (Asia) Software Technology Center (STCA), which also had to be suspended from WeChat after giving responses critical of the Chinese government.

species, from its beginnings as a microscopic organism, through development as an intelligent social creature, to interstellar exploration, and encounters with other alien species. While these examples, among others, can be seen as extensions of the Artificial Life models in the previous category, their distinctive identity derives from their presence in widely-used, mass-market products, encountered by a much larger group of users.

To complete this category of emergent beings, it is worth considering two even more common types of entity, which are closely associated with difficult or uncontrollable computer and network incidents: bugs and viruses. The computer ‘bug’ has its origins in the Middle English word ‘bugge’, which was the basis for the idioms ‘bugbear’ and ‘bugaboo’, both used to describe monsters. While the term saw use in engineering, even before computers, describing mechanical malfunctions, it came into wider use in 1947, when computer pioneer Grace Hopper traced an error in the electromechanical Mark II computer to a trapped moth, giving the term its connotation of ‘glitch’ or ‘error’.¹⁵ Though ‘bug’ is now less strongly associated with the creature, ‘software bug’ continues to personify errors, flaws or faults in a design, development, or operation of computer software, particularly those producing an unexpected behavior or an incorrect result. Viruses and worms are software that disrupt computers or networks, leaking private information, or gaining unauthorized access to systems – unknowingly interfering with the computer user’s security or privacy. Such software can take different forms (Tahir 2018), and its existence may have a range of motivations: intentionally designed by criminals interested in making money, they can also be created for political reasons, sabotaging government or corporate websites. Some viruses are self-reproducing, propagating themselves as ‘emergent beings’.

5 Digital Janitors

In the third quadrant – niche entities whose agency is largely controlled by human beings – we find a set of servants entrusted with simple tasks. Generally oriented towards maintenance, service and security activities, I refer to these entities as ‘digital janitors’. Reflecting the kinds of activities they discreetly take on, the term also evokes their relative invisibility and neglect, as is often the case for infrastructures and those agents that monitor and maintain them.

Among the most salient cases are those entities that support the infrastructure upon which our computer networks rely. These include

¹⁵ For more explanation, see the ‘Bug’ entry in the Jargon File: <http://catb.org/jargon/html/B/bug.html>.

daemons, computer programs running as background processes in multitasking operating systems such as Unix or macOS. Typically designated by process names ending in the letter *d* (reflecting their name), daemons perform various basic tasks: *syslogd*, for example, is a daemon that implements a system logging facility, while *sshd* takes care of incoming servers' SSH connections. The term 'daemon', coined by the programmers at MIT's Project MAC in the 1960s, is a reference to Maxwell's demon, an imaginary agent in physics and thermodynamics, envisaged as helping to sort molecules (McKelvey 2018; Canales 2020). The name also inherits some properties and associations from the 'demons' of Greek mythology, who discreetly intervened in human affairs.¹⁶

Similarly, *crons*, command-line utilities used for scheduling repetitive tasks on Unix-like operating systems, are sometimes personified as entities ('Why is my cron not working on my *dockerfile*?', I heard in a survey). At the heart of the common architecture of computer networks based on the exchange of requests via a remote machine, the 'server' can also be considered as part of this category of entities. The Jargon File defines the server as

a kind of *daemon* that performs a service for the requester and which often runs on a computer other than the one on which the requestor/client runs. A particularly common term on the internet, which is rife with web servers, name servers, domain servers, 'news servers'.¹⁷

Also in this category of digital janitors are the microworkers known as 'turkers' hired on Amazon Mechanical Turk (MTurk).¹⁸ This crowdsourcing platform enables businesses to hire remotely-located 'crowdworkers' to perform discrete, simple tasks which computers are currently unable to do as economically as humans and are more abstract than the janitor-like microtasks performed by daemons: cleaning and processing data, identifying specific content in an image or video, adding tags, writing product descriptions, or answering survey questions. Although Turkers are humans, their agency is constrained and channeled by the platform, which offers a basic interface to let them browse existing jobs, completing them for a fee set by the employer. Jeff Bezos,

¹⁶ For more explanation, check the 'daemon' entry in the Jargon File: <http://catb.org/~esr/jargon/html/D/daemon.html>.

¹⁷ <http://www.catb.org/jargon/html/S/server.html>.

¹⁸ The name of this service was inspired by 'The Turk', a chess-playing automaton made in 1770 by Wolfgang von Kempelen that toured Europe, and impressed statesmen like Napoleon Bonaparte and Benjamin Franklin. It was later revealed that a human chess master was hidden in the cabinet beneath the board, controlling the movements of a humanoid dummy, which explained its expertise.

Amazon's founder, uses the term 'artificial artificial intelligence' for the outsourcing of parts of a computer program to humans (Stephens 2023). This approach has been criticized for treating people as "software components" with "a sense of magic, as if you can just pluck results out of the cloud at an incredibly low cost" (Lanier 2013, 169).

6 Everyday Companions

The final category in this Monster Manual of the megadungeon encompasses commonplace digital entities with limited autonomy, which I name 'everyday companions'. Forming a less coherent cluster, these entities illustrate the plurality of digital cultures, reflecting the varied ways in which we live, communicate, work and play.

These everyday companions include rudimentary conversational agents,¹⁹ such as ELIZA, the infamous computer program that simulated a psychologist (Weizenbaum 1966), paving the way for what was later named the 'chatterbot' (Hale, Scanlon 1999), now known as the 'chatbot'. Among the vast number of systems of this type, the best-known include Bob, Clippy, Cortana (Microsoft), and Siri (Apple), all included in the operating systems and software running on our computers and smartphones. Without necessarily having the same conversational character, this category also includes search engines. The most frequently personified of these is Google Search, often referred to simply as 'Google' ('Did you ask Google?', 'Google told me that...'), as if it were an oracle providing counsel. Query platforms such as Ask.com have also played on this anthropomorphism, since its name was previously 'Ask Jeeves', named after a butler from the stories of the English writer P.G. Wodehouse.

A second subset of everyday companions are the various digital entities of the video game world. First are 'avatars', visual representations of the user or a character they control on a digital platform. Such representations are usually visual, encompassing two-dimensional icons or profile pictures, as used in internet forums and other online communities, and the three-dimensional models and bodies used in virtual worlds. An avatar can also just be a written description, as in text-based adventures such as MUDs. The idiom itself originates from the Sanskrit term *avatāra*, which stands for the 'descent' of a deity into a terrestrial form. First adopted by science fiction writers, it was then used for the on-screen representation of the user in

¹⁹ The term 'rudimentary' here refers to the techniques for simulating the production and processing of 'natural languages' used by programs such as ELIZA, which use pattern matching and substitution of regular expressions, giving users the illusion that it could understand the meaning of the conversation.

Richard Garriott's 1985 computer game *Ultima IV: Quest of the Avatar*, "signaling the potential for computing to offer a mystical or enchanted perspective within an otherwise secular world" (de Wildt et al. 2020).

Staying in the world of video games, our category of 'everyday companions' also includes NPCs, namely, those characters not controlled by a player. Originating in traditional tabletop role-playing games, where the term denoted people and creatures controlled by the Game Master rather than by human players, procedural programming techniques have rendered video game NPCs increasingly complex, capable of elaborate simulated behavior.²⁰ A further sub-category of these characters has appeared in the past decade: geolocated NPCs, such as Pokémon GO's monsters, enabled by the spread of mobile devices and their locative capabilities. This technical possibility makes it possible to give these digital entities a hybrid existence, spanning software and the everyday environment.

A third subset of everyday companions concerns those entities derived from cultural practices documented in digital folklore (de Setta 2019). Consider the troll, characterized in the Jargon File²¹ as an

individual who [...] regularly posts specious arguments, flames or personal attacks to a newsgroup, discussion list, or in email for no other purpose than to annoy someone or disrupt a discussion.

A definition that has expanded to social media and other online platforms. Think also of the abundance of internet meme characters found on social media, proliferating cultural figures replicated and modified by users. Within this subset, alongside depictions of people (e.g. Trollface, Leeroy Jenkins, Wojak) and animals (LOLcats, Nyan Cat),²² one can also find more obscure figures, such as 'creepypasta', with characters like Suicidemouse or Slenderman circulating as internet-native urban legends, rumors, or horror stories, "passed around on forums and other sites to disturb and frighten readers".²³

Strangetales, unverified rumors, shaggy dog stories, folk art, hoaxes and provocations are an integral part of the vernacular web

²⁰ The idea of the NPCs also became an internet meme, a label for people who do not think for themselves or do not make their own decisions. One canonical example of Wojak (also known as NPC Wojak) with his grey, expressionless face. Since Wojak is just a static image circulated and modified by human users, he is not in the 'emergent beings' category of the Monster map, but is, for many internet users, another familiar 'everyday companion'.

²¹ <http://www.catb.org/jargon/html/T/troll.html>.

²² Internet meme characters are well documented on the Know Your Meme platform: <https://knowyourmeme.com/categories/person>.

²³ A good compendium of creepypasta and their characters can be found on the internet subculture platform called Fandom: https://creepypasta.fandom.com/wiki/Creepypasta_Wiki:What_Is_Creepypasta%3F.

culture that emerged in the final decades of the twentieth century (Lialina, Espenschied 2009). In a sense, they also correspond with the hacker practices described by anthropologist Gabriela Coleman (2013), which were transformed with the spread of internet use. Hacking practices also feature lesser-known but equally important entities in our bestiary. This is the case, for example, with the Trojan horses: named after the ancient Greek story of the deceptive wooden animal that led to the fall of Troy, the term refers to a malicious computer program that tricks users into running it, granting a third-party unauthorized access to the affected computer. Unlike viruses, Trojans have less autonomous agency, being unable to propagate themselves in machines and computer networks.

7 Reflecting on the Monster Manual

Described succinctly here, the entities compiled in this paper are an essential part of digital folklore, in the ‘new digital volumetries’ that Berti and his colleagues propose as a way of grasping the dense, multi-faceted environment of the Megadungeon. Listing and describing these creatures as they might appear in a Monster Manual allows us to grasp the plurality of beings we interact with in our digital devices and online worlds. Taken alongside the descriptive elements, the map in figure 1 enables us to draw broader conclusions about the anthropological issues at stake.

An initial observation addresses the diverse origins and antecedents from which these entities derive their identity. Their names and behaviors track a range of sources and inspirations: animals (viruses, bugs, worms), creatures from Celtic or Scandinavian mythology (trolls, bards), ancient mythology (centaurs, daemons, trojan horses), or from beyond the Western world (avatars). For others, however, it may be a background linked to more recent conceptions, such as scientific terminology, or the acronyms typical of contemporary R&D (LLM, ChatGPT, HFT algos), references to characters from popular culture (Watson, Ask Jeeves), or portmanteaus (LOLcats, creepypasta). Whatever their origins, the aggregation of these entities in the monster map on figure 1 highlights the cultural syncretism at work in digital culture. This is also a merit of the Monster Manual metaphor, which, as in the case of *D&D*, constitutes a bestiary of bestiaries, compiled from a variety of sources (Peterson 2012). The Monster Manual blends a multitude of creatures from distinct cultural backgrounds, present in the composite environment that is the digital megadungeon.²⁴

²⁴ This survey focuses on material and entities from the Western world, and it would be exciting to further extend this compilation, widening the spectrum to encompass

The second observation of this compilation is that users' interactions with these entities are also multiple, comprising a vast repertoire of communications, influences and interdependencies. People may, for example, use or exploit these entities, by delegating tasks to them (the digital janitors). They may be perceived as a threat to be combatted or controlled (virus, trojan horse). Users may converse with these entities in general or specific ways, hoping to find information (Google Search). Users may test their limits through experimental insults (chatbots), hit on them (virtual girlfriends), play or have fun with them (cellular automata, NPCs), laugh about them (internet meme characters), observe their development and mourn their disappearance (Artificial Life, Sims-style NPCs). While the spectrum of relationships is broad, it does not cover the immense range of human relationships either. Furthermore, the vast majority of these relationships are based on a particular relationship with time. The entities described in these pages are not necessarily stable: LLMs and chatbots evolve as a result of changes in technology and the data that supports them, simulated abstract entities mutate, bugs appear and disappear, NPCs die, and others are revealed by video game producers, creepypasta rumors come and go.

A third, cross-cutting observation also emerges from this compilation: while I have presented these creatures individually, reflecting on their varying degrees of autonomy, they do not behave or operate independently. The social life of these entities does not only concern their interactions with users of software and online platforms. Some of these creatures interact, exchange or rely on others. For example, LLMs ('abstract entities') are necessary for the operation of conversational agents such as ChatGPT or Bard ('emergent beings'). Similarly, 'digital janitors', controlled by humans or programs, are vital for the infrastructure and operations they support. Troll activity ('everyday companions') can shape chatbots behavior, as we have seen in the cases of Tay and Xiaoice. The evolutionary mechanisms present in abstract entities such as cellular automata, Boids or Karl Sims' evolving creatures have also informed the behavior of NPCs and their avatars. Faults, errors and incidents encountered by users interacting with these creatures may become the subject of stories and rumors represented by the strange figures of creepypasta or internet memes. Lastly, relations between entities can be antagonistic and conflictual, as in the fight against bugs, viruses and worms, undertaken by digital janitors or more complex entities (e.g. multi-agent simulations).

Looking to the future, these digital beings increasingly exist beyond the virtual worlds and software embedded in our machines.

other cultural universes and world languages.

Initially limited to the desktop computers of the home or workplace, the advent of mobile and ubiquitous computing technologies is introducing new contexts, including all kinds of everyday places. Geolocation, augmented reality, and the digitization of everyday objects means that smartphones and other devices are becoming an interface for accessing new digital creatures in the world around us, as in the case of pervasive games such as Pokémon GO. While this example is but a minor part of the Monster Manual presented here, it is nonetheless a suggestive signal, heralding the return of marvelous entities to our everyday physical environment, after several decades circulating within our machinic, digital megadungeon.

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