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A Glimpse of the Imaginative Environment

Exploring the Potential of Data-driven Examinations of Visual Novel Characters

The following chapter describes a data-driven approach to visual novel game[1] production in Japan through the usage of fan-curated data gathered as part of the Japanese Visual Media Graph (JVMG hereafter) project. The JVMG project is a digital infrastructure project funded by the German Research Foundation (Deutsche Forschungsgemeinschaft, DFG).[2] Its goal is the development of a research database on Japanese visual media such as anime, manga, visual novels, and Japanese videogames for researchers in Japanese studies and media studies. It is envisioned as a highly interconnected structure, gathering, and correlating multiple data sources with its own research interface and array of data tools.

1 Introduction

The juxtaposition of manga/anime visual and narrative aesthetics with eroticism and pornography contiguous with *eromanga* has invited generalization of visual novel games as "interactive anime/manga with erotic content" (Taylor 2007, 198). Other examples of conflation include Forrest Greenwood, which subsumes *bishōjo* games – visual novel games featuring romantic and sexual interactions with cute girl characters, intended for a male heterosexual audience – into the "anime/manga media sphere" (2014, 238–239), or Jonathan

1 The usage of "visual novel game" within this chapter is done out of the necessity to employ a unified descriptor for Japanese visual novel game production at large. It does not seek to address specific game peculiarities such as the type of romanceable characters (*bishōjo* game, *otome* game, BL game) or the combination of more properly gamic segments with the textual-based framework of visual novel games. Specific discussion of sub-genres and their relative (dis)similarities is beyond the scope of this chapter.

2 The author of the chapter is a project member working on the JVMG project and the present chapter incorporates materials from blogposts the author has written for the Japanese Visual Media Graph Project Website (https://jvmg.iuk.hdm-stuttgart.de/).

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Clements, which collocates *bishōjo* games as limited animation (2013, 194). While these approaches do not fully account for the playful nature of visual novel games, it is also necessary to note that the predominantly non-interactive nature of this class of interactive software offers easy collocation into non-game media forms.

On the other hand, aesthetic continuity with anime/manga belies the peculiar position of visual novel game production in the wider Japanese visual media ecology. Visual novel games represent the majority of personal computer videogames produced and sold in Japan, with circa 500 titles released each year, by virtue of low entry to market requirements and low cost-recoup threshold (Koyama, Kobayashi [Hichibe] and Nakamura 2019, n.p.; Koyama 2020 [2016], 210). Production is scattered, with an average sales volume counted at 2000 units sold for each title (Kagami 2010, 136), with cost-recouping generally positioning itself at 3000 units sold (Koyama, Kobayashi [Hichibe] and Nakamura 2019, n.p.). It is a production niche positioned in an intermedia layer between hobbyist/semi-professional production (*dōjin*) and the generalist media industry (Hichibe and Tanaka 2016; Picard 2013).

The scale, scatteredness, and zoning of visual novel game production make conventional approaches difficult. If isolated cases of pornographic games such as *Rapelay* (Galbraith 2017; Pellettier-Gagnon and Picard 2015) have emerged due to their legal notoriety, their emergence obscures the hundreds of other titles released every year and provide a skewed perspective into the field. On the other hand, the production and circulation of Japanese visual novel games is excessively vast and too dispersed for isolated research attempts to return results on a comprehensive scale.

At the same time, the efforts at database building and data curation by enthusiast communities are still a mostly untapped source of information. In the case of a production niche such as visual novel games, it might be one of the few ways to access descriptive metadata at a level of granularity (see Kacsuk in this volume; Picard and Pelletier-Gagnon 2015, n.p.) eschewed by institutional sources.[3] More specifically, it allows access to a perspective that only enthusiast communities may consider, such as character engagement in visual novel games. Usage of fan-curated data for a comprehensive approach

3 One example is the Media Arts Database sponsored by the Japanese Ministry of Education, Culture, Sports, Science and Technology's Agency for Cultural Affairs. The database gathers data from print sources, internal archives from producers and institutional actors such as the National Diet Library, whose focus is on traditional media archival practices (Media Arts Database 2021).

can open the way to new understanding of niche media, beyond traditional research approaches.

2 Visual novel games: An overview

The term "visual novel game" points to mostly text-based interactive software where the focus of the gamic experience is on the establishment of intimate bonds with one or more characters. "Visual novel," in its original usage within Japan, referred to a series of software works developed by Leaf, the eponymous Leaf Visual Novel Series. In its usage within English-speaking contexts, it refers to interactive software works that privilege prose reading over interactivity, juxtaposed with visual and sound design in continuity with anime/manga aesthetics. Azuma Hiroki offers a similar definition, grouping a series of male-oriented software works featuring romance with anime/manga characters (cf. Azuma 2007, 193–194). Hichibe Nobushige (2006, 70, see also Koyama 2020 [2016], 218–219) identifies visual novel games as interactive software rooted in a system of six elements:

1) The presence of multiple, branching storylines that can be read through, and the possibility for the player to reach different outcomes in the narrative through decisions made at key points during the game.
2) The presence of full-screen illustrations (CGs) depicting the locale in which the narrative is taking place or specific events in the game's narrative.
3) The presence of character sprites (*tachi-e*), which can be superimposed over locale CGs.
4) Prose text, either displayed in a box in the bottom of the game window or superimposed over the CGs.
5) Aural performances (*BGM ya kōkaon*) matching character's current emotions and the state of the narrative.
6) The presence of visual effects interacting with the illustrations on screen (*gamen effekuto*).

However, this definition does not account for the focus on intimacy that can be found in a vast majority of such titles (cf. Azuma 2007, 193–194). The player reads prose text, enjoys illustrative artworks, and listens to aural performances detailing a story of budding intimacy. The decisions that the player is called to make to traverse the game are made in order to achieve a state of total intimacy with one or more characters from the game's cast.

Playing a visual novel game is a continuous multimodal parsing of information distributed across three channels, linguistic (prose text), visual (charac-

ter and locale illustration), and aural (soundtrack and vocal performance). Prose text is generally written in the first person, but resembles a script, rather than prose fiction. Character sprites and locale illustrations depict essential states, devoid of connection to the narrative, specific camera angles, or perspective foci. Aural performances do not cover the entirety of the game's narration, and the player's avatar is generally left completely unvoiced to improve player identification and immersion.

Players are elicited to "fill the blanks" (Galbraith 2017, 158) between these three channels, and in doing so, imagine a personal take on the game's narration. Progress through the game's narrative is marked by the encounter with "reward images" (*gohobi-e*) (Miyamoto 2013, 24), special, full-screen illustrative artworks depicting one of game's characters in a specific, plot-relevant situation. Differently from ordinary gameplay, a reward image is usually employed only once in the game and does not rely on the player's imaginative capability to produce the scene depicted through the text. Narrative scenes marked by a reward image articulate specific portions of a character's design and serve as a signal that the intimate bond with the character is deepening.

Physical intimacy in visual novel games is depicted in highly stylized ways contiguous with *eromanga*, with a focus on emotional engagement followed by erotic and pornographic depiction of sexual intercourse. However, the focus is generally away from mere sexual conquest, and rather seeks to contextualize pornography in a crescendo of mutual trust and reciprocity. As emphasized by critic Sasakibara Gō, the focus is on responding to the other's (character) actions and bear the responsibility for her emotional responses, ultimately influencing their life in a variety of ways (2004, 164–166). Unsuccessful navigation through the game may lead to the player being spurned or to the player character's demise, depending on the setting of the story. It is the player who bears the emotional consequences of their actions.

Visual novel games possess their own industry censorship and regulating body, *Sofurin* (Pelletier-Gagnon and Picard 2015, 34–35), along with specific circuits of content circulation and reception. Examples of these circuits include specialty stores such as Melonbooks and Toranoana, online shops such as dlsite.com, fan conventions such as Komiket, and historical examples of urban districts such as Akihabara and East Ikebukuro (cf. Morikawa 2012, 139–141, 2008 [2003], 81–101). Circuits such as these crystallize visual novel games as being part of a "culture of free imagination and creation" (Galbraith 2017, 42–43; Azuma 2007, 39), a semi-commercial space where free self-expression is the guiding value (Tamagawa 2012, 125–127).

Circulation of ideas in visual novel game production, especially in those works that reach market distribution, is one step removed from hobbyist production, still allowing great creative freedom with few gatekeepers beyond

their zoning as adults-only media. Content producers operating in this liminal space can oscillate between hobbyist production and professional activity, serving as a "talent pool" and "upstream source" of ideas for generalist media industries (Koyama, Kobayashi [Hichibe] and Nakamura 2019, n.p.). Examples of the liminal position occupied by visual novel games include the *Fate* (Type-Moon 2003–2021) transmedia franchise, whose initial release was the 2003 visual novel *Fate/Stay Night*. Creators whose careers originated in visual novel game production include novelist and screenwriter Urobuchi Gen, who debuted with *Phantom – PHANTOM OF INFERNO* (Nitroplus 2000) and director Shinkai Makoto, whose early directing career included introduction movies for *Bittersweet Fools, Wind: A Breath of Heart, Haru no Ashioto and Ef: A Fairy Tale for the Two* (Minori 2001, 2002, 2004, 2006).

Preceding individual authorial voices, visual novel game production is characterized by its reliance on a semi-formal, peer-learned (cf. Galbraith 2017, 71) system of conventional modes of content reception and production. This tendency has been metaphorized as the so-called "database" of character design element delineated by Azuma Hiroki (2009 [2001]. 42; 2007, 41–46). It is a system centred on character creation, composed on hundreds of possible combinations of distinct elements of character designs. Character designs are divided into abstractable elements, ranging from single portions of visual designs such as glasses or ribbons, to archetypal plot seeds regulating a character's personal narrative and identity. Production is done via recurring and self-referencing distinct elements spanning visual design, idiolect, and personal narratives (Bruno 2019, 40; Galbraith 2017, 152, 159). Elements of character design can be as limited as components of a character's appearance (hairstyle, clothes, accessories) or all-encompassing as their demeanour towards the player and other characters.

> Different colors of hair and hairstyles might suggest character, for example "blond with pigtails" (*kinpatsu tsuin tēru*), which I was consistently told referred to characters with a bad attitude and a soft heart. There are hundreds of these combinations. A strand of hair sticking up, which is called "stupid hair" (*ahoge*), suggests a character that is energic but not too bright. Glasses may convey intelligence or shyness and a girl with glasses becomes a character type, "glasses girl" (*meganekko*) (Galbraith 2017, 150–151).[4]

4 Galbraith's research concerns visual novel games targeted towards a male audience. However, female-targeted visual novel games have a similar system of character design elements, with many specular examples. For specific discussions on visual novel games directed at female audiences, see Okabe and Pellettier-Gagnon 2019. For a discussion about female fans practices connected with the wider media environment of visual novel games from the perspective of female fans, see Galbraith 2011.

Character designs encode specific cues that pre-empts arrays of possible interactions within a visual novel game, while also allowing character recognizability across media and stylistic alterations (cf. Iwashita 2016, 166–167). They generate an interplay of anticipation, confirmation, and subversion of expectation that concurs in creating the overall experience of character-based intimacy. Parsing and decoding embedded cues and understanding invoked codes is a specific and emergent form of media literacy (Galbraith 2017, 151–152; Kacsuk 2016, 277; Kagami 2010, 131). Such a literacy points not just to conventional templates, but also to their various actualizations across time and media.

On the other hand, content production that sets itself outside of the visual novel niche tends to reject its conventions. Certain instances of content production may even crystallize character and stories inspired by the visual novel production niche in a way that is accessible for more generalist audiences. This can arguably cause a return to primacy of authorial intentions and media affordances (cf. Suan 2017, 71). Examples of deliberate rejection of conventional system in favour of authorial primacy lies in the works of Miyazaki Hayao and Studio Ghibli (cf. Lamarre 2009, 186). Less radical examples of removal of invoked codes include the later works of Shinkai Makoto, especially *Kumo no Mukō, Yakusoku no Basho* (CoMix Wave Films 2004), *Kimi No Na Wa* (CoMix Wave Films 2016), *Tenki no Ko* (CoMix Wave Films 2019), and the *Violet Evergarden* transmedia franchise (Kyoto Animation 2015–2020).

The embedding of cues into character design and the reliance on the system of design elements make visual novel games particularly reflective of a tendency cultural critic Azuma Hiroki defines as "database consumption" (*dētabēsu shōhi*) (Azuma 2009 [2001], 47–53). Database consumption is a descriptor for a variety of tendencies in character-centric media production and reception that emerged in Japan at the turn of the twenty-first century. It highlights the tendency for modes of content consumption to locate themselves not at the level of fiction (overarching plots, narratives, etc.), but rather to the level of metafiction. It is reflective of a tendency towards abstraction, (re)production, (re)iteration, and (re)circulation of content, without apparent regard for established traditions or overarching narratives (Ibid., 53–58).

Azuma analyses the proliferation of characters composed of elements abstracted from other characters in an endless cycle of parody, quotation, and iteration, bringing the characters referencing Ayanami Rei from *Neon Genesis Evangelion* (Gainax 1994) as an example. He argues that, as it is apparently no longer possible to identify an origin point or regulating entities for tendencies in character production, the notion of original work, with its definitional power over characters, is no longer useful or important. However, while there might indeed be a decline of regulating elements such as identifiable authorial figures, design elements abstracted from the character can still arguably be traced to its

original template (cf. Bruno 2019: 47–48). At the same time, the proliferation of such characters still points to a kind of shared trajectory within wider content production, implicit as it may be:

> The emergence of Ayanami Rei did not influence many authors so much as change the rules of the moe-elements sustaining otaku culture. As a result, even those authors who were not deliberately thinking of Evangelion unconsciously began to produce characters closely resembling Rei, using newly registered moe-elements (quiet personality, blue hair, white skin, mysterious power). Such a model is close to the reality of the late 1990s. (Azuma 2009 [2001], 51–52).

Azuma's work detailing database consumption and its implications, *Otaku: Database Animals,* has stimulated discussion both within Japan and abroad, leading to a constellation of theoretical contributions in studies of Japanese pop culture, touching animation (Lamarre 2018, 2009; Suan 2017; Condry 2013), sequential art (Nagayama 2014; Itō 2014 [2005]), psychology-grounded examinations (Saitō 2011 [2001]), media histories (Ōtsuka 2014, 2004; Yoshimoto 2009; Uno 2008), urban and virtual space (Morikawa 2012, 2008 [2003]) and production paradigms (Steinberg 2015a, 2015b, 2012; Ōtsuka 2010 [1989]).

Azuma would later further explore this shift in sensibilities in the 2007 follow-up to *Database Animals*, *The Birth of Game-Like Realism* (*Gēmutekina Riarizumu no Tanjō. Dōbutsukasuru Posutomodān 2*). Therein, Azuma changes focus from content consumption to pop literature. However, as argued by Zoltan Kacsuk (2016, 276), the book also reveals further engagement with the effects of the transformation detailed in *Database Animals*. Through *Game-like Realism*, Azuma exposes the how sensibilities move away from linear modes of reception proper of traditional representational-realist literature, especially within select areas of Japanese visual media. The shift in sensibilities proceeds towards an awareness of the increasing encroaching of non-interactive works by interactive media such as video games and their surrounding contexts (2007, 193–197).

3 Towards an environment-based approach

Within *The Birth of Game-Like Realism*, Azuma shifts his examination from practices of content reception to the analysis of new modes of content production. He builds on existing discourse on media production in Japan, highlighting the shift in focus from fiction to meta-fiction. While he already highlighted such a shift in *Database Animals*, in *Game-Like Realism* Azuma examines its implication in pop culture production. Even though the focus of the book is on

the literary media of light novels, Azuma makes ample use of visual novel game case studies, juxtaposing them with light novels to highlight the influence of metafictional affordances across media.[5]

The shift to metafictional affordances is represented by tendencies such as the database of character design elements. More generally, it is the emergence of characters who are not specifically tied to one work or one story, but rather can exist within, without, and in-between narratives and media (Azuma 2007, 133–134). A character can have multiple lives and multiple stories, but remains, for all intents and purposes, the same character. To reconcile the discrepancy, Azuma expands manga critic Itō Gō's (2014 [2005]) framework for manga analysis, which distinguishes between a character's nature as an identifiable, namable visual sign, the *proto-character*, and the character as entity possessing a distinct identity and traceable existence, the *dramatis personae* (*tōjō jinbutsu*) (Itō 2014 [2005], 109–120; Itō, Natsume and Azuma 2007, 132; Azuma 2007, 133–136).

Itō highlights that characters possess a double nature, one that is strictly visual and can be consumed as a simple illustration (proto-character), and another one which references a fictional existence that makes the character more akin as a person (dramatis personae) (cf. Itō 2014 [2005], 115). The former is tied to the character's visual recognizability and consistency, and the bedrock upon which all modes in which the character is received must ultimately uphold (Nozawa 2013, n.p.; Itō 2014 [2005], 116–117). The latter dimension is tied to specific stories or works (Itō 2014 [2005], 120–121) and is identified with the potential for literary value in manga and anime works argued by media critic and historian Ōtsuka Eiji (Itō 2014 [2005], 131–141; Azuma 2007, 88–92; 136–138). The re-emergence of multiplicity in manga narratives, both on the side of reception and on the side of production, is seen by the existing manga critical discourse as a regression to earlier forms of manga with inferior artistic value (Azuma 2007, 88–92).

More specifically, it is identified with a negation of the definitional power of narratives over character identity, which Ōtsuka exemplifies as the capability of depicting character death. Emphasizing death as the ultimate depiction of tangible reality, Ōtsuka places the culmination of Japanese post-war manga history as the capability to employ the descriptive affordances of manga to depict reality, in what he defines as anime/manga-like realism. If character death can be rendered non-definitive, as just one of many narrative possibilities, the expressive potential of anime/manga-like realism is lost.

5 This section will privilege Azuma's approaches to visual novel games, rather than light novel pop literature acknowledging the latter when necessary.

Itō argues that Ōtsuka's position, which echoes through Japanese manga criticism, is just one position that became dominant amongst manga criticism. The critical discourse is now dysfunctional and refuses to engage with manga originating in sensibilities different than those circulating amongst critics (Itō 2014 [2005], 2–8). Itō posits a double nature of characters to develop a new framework capable of approaching the multiplicities in modes of reception and production that are now circulating.

Azuma substitutes Itō's division between line drawing and narrative identity with a focus on character design elements, beyond the visual aspect emphasized by Itō (cf. Itō, Natsume and Azuma 2007, 132). The database is envisioned as a shared set of practices of both reception and production, employed in content production and parsed in content reception. In particular, he emphasizes the continued influence of digital media upon analogue media, and its encroaching of the modes by which audiences relate to fiction. Azuma acknowledges the potential for imagining alternative paths, the returning to a previous state to undo one's mistakes (videogame-like "save and loading") and a different focus of character empathy located in the ability to make choices as a player-controlled character (Kacsuk 2016, 281; Azuma 2007, 140–142).

Azuma envisions a shift away from anime/manga like realism, with its ultimate goal of using the affordances of anime to reproduce reality, to what he calls "game-like realism" (Azuma 2007, 120–123). Game-like realism shifts the focus away from reality and highlights the ever-growing familiarity of audiences not just with video games, but with the wider digital environment, in which alternative readings of fiction, non-linear information gathering and interaction for the sake of interaction exist side by side (Ibid., 127–130).

Azuma describes this phenomenon as an "imaginative environment" (*sōzōryoku no kankyō*) (Azuma 2007, 36–41, 196). Generally described, an imaginative environment is a recognizable context of media production and consumption that is highly aware of its internal production and reception affordances. Such awareness is explicated in content production practices such as so-called database/*moe* elements (Azuma 2009 [2001], 39–42 and 2007, 41–45) and the capability to decode the cues embedded in their assemblage (Galbraith 2017, 150) required of users in content reception. Successfully decoding the cues produces an emphatic response articulated in affective-performative fashion which is ironic and self-reflective (cf. Sone 2014, 199). In the case of visual novel games or light novel works, such affordances are articulated through the character, under the system of character design elements and database consumption. In fact, characters constitute a "basic unit of narrative" (Azuma 2007, 45), with its own array of potential narrative situations and inter-character interactions.

One example of this tendency in action, within the imaginative environment pointed by Azuma, can be found in characters with animal ears (*kemonomimi*). The presence of this design element calls to animal-like mannerisms: it may call forward to interactions of a comical nature based on the predatory attitudes of animals the ears are modelled after, such as a character sporting dog ears being in contrast with a character whose ears are feline in shape. It can also direct towards the presence of specific idiolects, such as the employment of *-nya* (Japanese for *meow*) as an affix for words. In turn, this exert influences on the narrative's tone and genre, before authorial intention can be deployed (Bruno 2019, 42). In other words, authorial intention and media affordances exert their influence *after* the affordances of imaginative environment have been articulated through characters, which represent a kind of "metagenre," or "genre zero" (Azuma 2007, 48).

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Furthermore, the usage of media descriptors such as "visual novel game" and "light novel" or character descriptors such as "*bishōjo*" and "*bishōnen*," points not so much to the media itself, but rather to the content within, regardless of host media specificities (Ibid., 49). More specifically, it points to the content being connected to and expressing the underlying imaginative environment, calling to specific practices of production and reception. It is the connection with and acknowledgement of the wider imaginative environment that allows the mobility across media, with characters serving as its primary marker.

To take such environment-based influences into account, Azuma invites to forego traditional methods of analysis. Constructing his approach from observations of the similarity in structure, conventions and affordances across disparate and unconnected authors, Azuma delineates an "environmental" approach that takes the imaginative environment's non-transparent language

into account while bypassing the authorial figure as traditionally intended. He defines this process as "environment analysis" (*kankyō bunseki*) (Ibid., 156–157).

"Environment analysis" is an effort towards the understanding of shifts not just on the side of content producers, but also on the side of consumers, whose reception of content is no longer done in a transparent way, but rather through an opaque language. Understanding the invoked codes of imaginative environments is therefore an operation that requires to acknowledge both sides. To do so in the case of the imaginative environment of characters, Azuma cites texts such as Shinjō Kazuma's *Light Novels: "Super" Introduction* (*Raito Noberu "Chō" Nyūmon*) (2006), emphasizing the predominance of character types over plots, the possibilities that come with it and the shift to a gamic worldview (Ibid., 40–41, 128–130).

Azuma focuses on the ever-increasing influence of digital media to highlight the need to acknowledge the presence of multiple avenues by which media can be experienced. In actual interactive media, such as visual novel games, interactivity is present and emphasized through multiple possible character-based finales. In the case of media that do not offer the possibility of interaction, such as light novels, multiplicity is referenced through production of side stories or alternative narratives, or by explicating the possibility of alternative paths akin to save and loading visible in the narrative.

Both interactive and non-interactive media, reference such a multiplicity in articulating the system of character design elements. Even the many character-based finales – with their definitional potential – available to the player in a visual novel game still set the stage for re-contextualizing characters in other contexts. On the other hand, while characters reference arrays of possibilities rather than one single overarching plot, the array of possibilities is not limitless, and in fact suggest specific trajectories, as the focus on character-based intimacy can attest.

Examining the wider imaginative environment to ascertain the existence of specific trajectories is, however, problematic from a case study-based approach. While Azuma decided to resort to guidebooks rooted in the imaginative environment itself, the dispersiveness of visual novel production across companies, individuals and groups of individuals calls for a more granular approach independent of single perspectives. Vivacity of production and the implications that stem from low average sales must be considered when making approaches to visual novel game production. To these challenges, one also needs to consider the potential for internal divisions within the player base and distinctive self-positioning of player identity (cf. Tosca and Klastrup 2019, 189–190; Au Yeung 2008, 149–151).

Beyond wide-ranging approaches, it is also noteworthy that playing through a visual novel game can take up to 50 hours of game time, a task

that makes close reading approaches also problematic. This is especially evident in visual novel games where the completion of multiple character storylines can be necessary to fully comprehend the game's metaplot and subsequent relationships with the imaginative environment. Finally, individual creators or constellations thereof can command their own distinct audiences (cf. Galbraith 2017, 204–212), which adds yet another layer of complexity to prospective approaches.

The imaginative environment of visual novel games and other media such as light novels present a double challenge: it is necessary to account for both the vastness and scattered nature of visual novel game production along with a superficial tendency towards reproduction by imitation, rather than explicitly signals of the presence of shared design principles. One answer to the above conundrum is represented by fan-curated data, gathered in internet databases. Fan-curated databases offer a window into audience reception of media, and in the case of visual novel games, they have the potential to offer enough data to map the imaginative environment. Through such a map, the possibility for gaining new insights into visual novel game production from an "environmental" perspective becomes apparent. Continuous data input by fans allows for access to developing views, and most importantly, given an influential enough repository, exposes the consensus views around specific objects. In the case of visual novels, it allows us to gauge the usage and reception of character design elements on a large-scale, providing a glimpse of the contours of visual novel game production and its internal tendencies and trajectories.

4 Environmental Mapping: The imaginative environment through fan-curated data

This chapter's attempt at mapping the imaginative environment of visual novel game production will employ data gathered through collaboration between the JVMG project and The Visual Novel Database (VNDB and vndb.org hereafter). Differently from fan-curated repositories dedicated to both anime and manga, VNDB is exclusively dedicated to visual novel games. It is an English-speaking database whose efforts have led to a nearly comprehensive survey of visual novel game production, with a focus on Japanese-originated works. Beyond its stated goal of "becoming the largest, most accurate and most up-to-date visual novel database on the web" (Heling, 14 June 2021), vndb.org offers extensive data collection on visual novel games, their characters, and the visual novel industry. It catalogues characters, companies, creators, and voice actors, with a system of tags for game descriptions and a system of traits for description of characters.

VNDB also features relational diagrams of visual novel titles, detailing sequential relationships (sequel, prequel, fandisks, expansions) and commonality of fictional universe. Such a database does not exist in a vacuum and offers in-data entry connections to other fan-curated databases, especially in cases where a visual novel title possesses animated adaptations or is an adaptation of an existing franchise, featuring connections to other fan-curated databases such as *MyAnimeList* or the Japan-based *Erogescape*. As of 10 June 2021, vndb.org has over 29,962 entries for visual novel games and over 94,432 entries on visual novel game characters.

Visual novel game titles are described via a system of tags, grouped into the five categories of Theme, Style, Character, Plot, and Setting. Characters are described via a system of eleven trait trees: Hair, Eyes, Body, Clothes, Items, Personality, Role, Engages in, Subject of, Engages in (Sexual), and Subject of (Sexual) and whenever they are a protagonist (player character), a main character (a character which can be romanced in a narrative that leads to one of the game's finales) or a side character (a character which cannot be romanced).[6] The system is extremely granular and allows for an accurate description of both the plot of a specific visual novel game and the characters it features. The breadth and width of available data offers a potentially comprehensive mapping of visual novel game production and reception, as compiled by the enthusiast community of vndb.org.

Before any meaningful examination of the dataset can be made, however, it is necessary to acknowledge two corollaries, especially in the case of character data entries. First, character traits, especially those offering a very high level of granularity, tend to occur together with other traits, rather than in isolation. A character entry on VNDB tends to feature multiple traits from several trait trees. Specific traits implicitly or explicitly call for the presence of other traits. One example is the "Ahoge" trait, which describes a strand of hair that acts differently from the rest of the character's hairstyle. It implies the presence of hair on the character, and therefore of traits describing what is not an "Ahoge" on the character's head.

At the same time, an approach that merely counts a trait's incidence, how many times a trait occur across characters, can be misleading. A single trait might possess high incidence, but only be found in a minority of character

6 This approach does not deal with Protagonist characters, which are player-controlled avatars, are generally not seen for most of the gameplay experience and are usually not an object of interaction for the player. To facilitate data integration and disambiguation with other data sources in the JVMG infrastructure, the "main" character role has been renamed as "primary" character and will be referred to as such hereafter.

data entries. An example of such a trait is “Childhood Friend”: of the 94,432 character entries on vndb.org, only 4765 possess the trait, circa 5.045 per cent. While this result can be meaningful, it is not productive to investigate the design makeup of “Childhood Friend” characters. It is not possible to understand where “Childhood Friend” occurs in relation to the traits that occur in connection with it. Any approach to character data in VNDB must therefore account for the interconnected nature of character traits.

To include such nuances in the examination of vndb.org’s dataset, it is necessary to devise an appropriate approach, taking the corollaries listed above into account. One way to do so is to focus on the co-occurrence of character traits: the count of how many times traits occur together with one another. As traits in vndb.org character entries tend to occur together, employing co-occurrence allows us to visualize a clearer picture of the vndb.org dataset. In fact, the character trait dataset can be represented as a graph, a set of objects (traits) related with each other by how much they occur together (co-occurrence) on characters. By using network visualization software such as Gephi, it is possible to visualize the dataset as a network diagram, turning character traits into nodes and trait co-occurrence into the edges that connect nodes to other nodes. While visualizing the entire dataset is not productive (see Figure 1) due to its size, isolating a small sample of traits reveals the potential of this method, which can be repeated on a vast scale (see Figures 2 and 3).

Beyond visualization, Gephi provides an array of data analysis tools that allow further investigation into visual novel game production. A graph can be measured in several ways, all of them providing potentially productive perspective on the structure of a dataset. In the case of vndb.org, one particularly useful measure is modularity. Modularity is the measure of how many communities of nodes can be derived from a graph on the basis of connection strength between nodes. Modularity allows us to structure the connections existing between groups of traits in a given dataset as subnetworks. Which nodes compose each subnetwork become a window into visual novel game character design practices, as catalogued on vndb.org.

Another group of measures that provides useful insights is centrality. Centrality refers to the measure of a node’s importance within a network on the basis of a given attribute. It can be used to measure which nodes act as intermediate points between two other nodes (betweenness centrality), which nodes possess the highest number of connections (degree centrality), which nodes possess less degrees of separation from all other nodes (closeness centrality), which nodes are most connected to other highly connected nodes (eigenvector centrality or prestige score). In the context of the present analysis of the VNDB dataset, eigenvector centrality allows us to measure which traits provide the most insights on each subnetwork.

By measuring which nodes are the most connected to other highly connected nodes, it is possible to gain a very specific insight into vndb.org's dataset, namely, which nodes constitute the cores of our networks. In other words, it is possible to further map the internal connections of the dataset and highlight the potential presence of traits that could be considered archetypical in character creation or recognized as such during data compilation. Should these traits also share other commonalities, such as descriptive themes or trait trees, it would further suggest the presence of shared character archetypes, or the recognition of such ensembles by VNDB users. If this assumption proves correct, it becomes possible to observe trajectories and internal tendencies of visual novel game production through fan-curated character data. On the other hand, a network "core" of traits lacking commonality would elicit different considerations and would ultimately suggest against the presence of such archetypes in visual novel game character creation.

VNDB's dataset was subjected to Gephi's modularity algorithm at default settings, which derived a total of three subnetworks. Gephi's modularity algorithm derives a network's modularity via Blondel et al. (2008)'s modularity optimization-based heuristic method. Blondel's approach derives subnetworks in the dataset on the basis of potential increase in internodal connection. The process is split into two phases. The first places each node in its own sub-network and then checking for increase in connection strength by moving nodes into the same sub-network. The operation is repeated until increase in internodal connection strength can no longer be obtained. At this stage, the algorithm moves to phase two, which creates a network of the networks that emerged during phase one. The entire process is repeated for a set number of times (Gephi's standard is one-hundred iterations). On the basis of this process, it is reasonable to expect subnetworks emerging from the VNDB dataset to be composed of traits which co-occur the most among themselves.

After modularity, each of the three subnetworks was subjected to eigenvector centrality algorithm, which allowed us to rank each subnetwork's nodes. The results are listed in Table 1, detailing number of sub-networks derived, their eccentricity, the relative size of each subnetwork (percentage), its top ten nodes by eigenvector centrality, along with a brief description. VNDB's character trait dataset appears to possess a maximum eccentricity of 3.0. In other words, every node is at a maximum of two degrees of separation from every other node. From the perspective of character traits in VNDB, it means that even if two traits do not co-occur together, they both co-occur with a third common trait. The majority (69.59 per cent) of character traits possess an eccentricity of two. The remainder (30.41 per cent) possess an eccentricity of three.

In other words, vndb.org's character traits dataset is tightly interconnected: the majority of traits can be found either co-occurring with every other trait in the database or co-occurring with a trait that co-occurs with a third trait. This arguably can be seen as a reflection of the tendency towards following the same aesthetic practices across visual novel game production at large. The results strongly suggest a non-random distribution of traits in the VNDB dataset. The emerging node communities differ significantly in terms of size, their share in the overall dataset and even the themes of the nodes that compose the subnetworks. This is very evident upon examination of the second subnetwork of the dataset. This subnetwork clusters traits which pertain to the description of a character's sexual activity and pornographic depiction in a visual novel game. If overall distribution followed a random pattern, it is likely that this clustering pattern would not occur in favour of a distribution of sexual traits across the three derived subnetworks.

Regarding eigenvector centrality, observation of the three subnetworks reveals a prevalence of nondescript traits in subnetwork one and three. Within the first subnetwork, the highest scoring traits describe a character's hairstyle ("Short Hair," "Parted to Side"), hair colour ("Brown Hair," "Black Hair"), an age group ("Young Adult (Apparent Age)"), eye colours ("Amber Eyes," "Brown Eyes," "Red Eyes"), two pieces of clothing ("Shirt," "Necktie"). Within the third subnetwork, the highest-ranking traits describe a character's skin colour ("Pale Skin"), an age group ("Teen (Apparent age)"), a character eye colour ("Blue Eyes"), four hair styles ("Long Hair," "Waist Length + (Hair)," "Straight Hair," "Sidehair (Hair Tail)") and one hair colour ("Blond Hair").

Employing eigenvector centrality, in this case, was ultimately not as productive as anticipated, especially in light of the highest-ranking traits in subnetworks one and three. No traits or ensembles thereof that could clearly suggest the presence of shared character archetypes in visual novel design practice could be observed. From these results, it is only possible to surmise that hair styles and body types are important in character design, and that traits describing sexual activity mainly recur with each other in their own subnetwork.

On the other hand, subnetwork two becomes more interesting when juxtaposed with the gendered specificities of visual novel game production. Pornography in the field of visual novel game tends to follow a gendered distribution. Visual novel games intended for a male audience generally feature explicit depiction of sexual intercourse between the (male) player character and the game's romanceable (female) characters (Azuma 2007, 193–196) Visual novel games intended for a female audience present different nuances. Visual novel games intended for female audiences and featuring experience involving heterosexual relationships will generally not depict sexual intercourse between the

(female) player avatar and romanceable (male) characters (Tosca and Klastrup 2019, 191). Visual novel games directed at female audiences that feature homosexual relationships will tend to be much more explicit in showing intercourse between the (male) player avatar and romanceable (male) characters (Okabe and Pelletier-Gagnon 2019, 41).

Therefore, subnetwork two is not representative of the nuances concerning the distribution of pornography within Japanese visual novel game production, as usage and distribution of character pornography vary widely on the basis of the game's intended audience. A stratification of the dataset to account for these nuances is therefore warranted, in order to account for a character's intended audience. The combination of character gender and the status of a character as a possible target of romantic interaction – the character possessing a storyline leading into one of the game's endings – were selected as marker for the intended audience for the character's host game.

The stratified data results in four sub-datasets, each grouping characters according to a combination of gender and character role: primary female characters; side female characters; primary male characters; and side male characters. Performing a new analysis of modularity and eigenvector centrality score on each of the four sub-datasets reveals a significant numerical disparity between female and male. There are many more female characters and games directed at a male audience than characters and games directed at a female audience. The high number of female characters allows us to create a very clear picture of visual novel games intended for male audiences. The relatively low number of male characters implies a fuzzier picture of visual novel games intended for female audiences. The results of calculating each sub-dataset's modularity and eigenvector centrality scores for their respective subnetworks are listed in Tables 2.1 through 2.4.

While it is possible to observe a continued strong tendency for sexual/pornographic traits to cluster together, other subnetworks across the four sub-datasets present interesting differences. The presence of sexual/pornographic traits in other communities suggests that, when character gender and role are taken into account, the number of depictions of character sexual activity changes across different character populations. At the same time, a higher degree of thematic commonality – traits pointing at specific situations, social and family status and more – could be seen in each subnetwork's highest eigenvector centrality traits. The increasing thematic commonality in high eigenvector centrality traits in our stratified datasets indicate select groups of character traits might possess an "archetypal" function. These archetypes – a model for characters described with the traits grouped within a subnetwork – vary on the basis of the character's intended audience, and do not apply to visual novel game production in its entirety.

For example, the first subnetwork of the female main characters datasets, numbering 60.38 per cent of all nodes in the network, suggests a high prevalence of characters that attend high school. Amidst the subnetwork's highest-ranking trait by eigenvector centrality, there are traits describing specific pieces of clothes ("School Uniform" and "Thigh-high Stockings") and social statuses ("High-School Student") rather than a sequence of nondescript visual traits. While high eigenvector centrality in a group of traits does not guarantee that these traits will co-occur together all the time, it offers a reasonable assurance that these traits co-occur frequently with themselves and across their sub-network.

Similar archetypal ensembles can be seen in other datasets such as the subnetwork of the male main characters dataset. This subnetwork is much more limited in scale and comprises only 12.87 per cent of all traits in its dataset. "Childhood Friend," "Classmate," and "Friend," along with "Teen (Apparent Age)" and "School Uniform," outline an even stronger archetype of a high-school student, which is a childhood friend of the protagonist character. In the context of male main characters, these traits ranking high in eigenvector centrality point to narratives, social status and settings connected with school life, in a stronger fashion than their female counterparts. On the other hand, the percentage of characters actually featuring in high school settings in visual novel games directed at female audiences is certainly lower, as the fourth subnetwork in the male main characters dataset comprises of a much smaller percentage of all traits.

Beyond high school student characters, it is possible to observe different distributions of traits describing character sexual activity and pornographic depictions across different character roles. In male main characters, it is possible to observe that, among traits pointing to character sexual activity, traits connected with homosexual intercourse such as "Male-on-Male Sex" or practices that can be related to homosexual erotic activity such as "Anal Sex (Subject of)" and "Blowjob (Engages in)" possess high eigenvector centrality. If this sub-network is contrasted with sub-network number four, it is possible to surmise that pornography in the male main characters dataset possess a specific trajectory towards depictions of homosexual intercourse.

A similar division, albeit not as clear cut, can be observed in female main characters. While traits describing character sexual activity cluster together, this time pointing at heterosexual intercourse, there is one trait found outside their subnetwork, "Virgin Sex." The presence of "Virgin Sex" outside of the second, pornography-centred subnetwork allows us to envision a dividing line amongst visual novel games directed at a male audience. Visual novel games offering a variety of pornographic and sexual depiction of characters, rather than a focus on one specific depiction might offer a different type of experience

than visual novel games where character pornography is present but not at the forefront of the game's experience. In this specific case, it suggests that there is a set of recurring practices in designing female characters who attend high school with a related conception of intimacy. More importantly, such a conception of intimacy is recognized as such by VNDB users.

It is also necessary to specify that depictions of characters performing sexual intercourse with characters of the same sex does not necessarily imply non-heteronormative identity. Pornography in visual novel games is still mostly intended for heterosexual audiences of both genders. However, looking at data like the VNDB dataset allows us to highlight the fault lines in a production niche featuring a tendency towards similarity in design practices and apparent imitation. Observing the different distributions of sexual/pornographic traits in visual novel game characters allows us to draw a very significant division in visual novel games directed at different audiences.

Beyond distribution of pornographic traits, subnetworks such as the first subnetwork in the female primary character dataset and the fifth subnetwork in the male primary dataset provide important insights in visual novel game character creation practices. This offers a glimpse into some of the tendencies within visual novel game production and consumption. In particular, examining the most important traits by eigenvector centrality in each sub-network highlights recurring patterns of character creation and recognition by users, which indicates the development of specific character archetypes. This further suggests that visual novel game production might not be as flat or indistinct as Hiroki Azuma's discussion of imaginative environment might suggest.

5 Concluding thoughts

This chapter has juxtaposed selected portion of the Japanese critical discourse pertaining to Japanese visual novel games and their characters. In particular, it has juxtaposed the shift towards Azuma's environment-based approach with an actual approach grounded in fan-curated data. This process was able to provide an exploration of the imaginative environment of Japanese visual novel games and their characters at a metaphorical ground level, less removed than metatext such as *Raito Noberu "Chō" Nyūmon*. It offers the possibility to critically engage theoretical concepts which, by way of the scatteredness and scale of visual novel game production, cannot be verified by traditional research.

Beyond the immediate advantages of being able to test general concepts such as Azuma's imaginative environment at their scale – a possibility not offered by traditional approaches – it represents a first effort towards the mapping of production niches such as Japanese visual novel games. Such a

mapping effort has both confirmed and contrasted Azuma's positions regarding visual novel games and their characters: while the character can be indeed envisioned as a "basic unit of narrative," the envisioning of database/*moe* elements as consumable in isolation is not reflected within the *vndb.org*'s dataset. Fan-curated data has shown that there are traits which call for the presence of other traits, hinting at underlying structures in visual novel game character design, production, and reception.

This development might be in fact closer to tendencies highlighted in BL sequential art by Kristine Santos (2020): an intertextual database of narrative and visual tropes which readers draw upon (3). "While Azuma argues that fans of anime and manga use this database in isolation, I argue that within BL culture this 'database' is deeply intertextual – a place where fans find pleasure in compounding and transforming layers of meaning into different media elements." (5). In fact, the developments outlined in this chapter also echo Sone Yuji's position on database/*moe* elements: "[Reinterpretation and reappropriation of anime/manga works and subsequent reproduction as new or derivative material] cannot be characterized by free association, because there are particular codes and styles through which the otaku feels '*moe*', an intense excitement and desire that, in this context, drive otaku [fans] to consume these images" (Sone 2014, 209, bracketed addictions by the author).

While there is an inherent risk of a database's own data model occluding the "actual" imaginative environment, the shared nature of fan-curated repositories arguably mitigates such a risk. In fact, a further mitigation of such tendencies might be achieved by the employment of multiple datasets originating from multiple fan-curated sources. From a methodological standpoint, the employment of data analysis tools offers an increased level of possibilities than limiting one's approach to close examination of fan-curated repositories as they are: beyond individual affordances – different repositories offer different ways of delivering data to their users – the steps required to visualize data into a graph have the potential to unearth the underlying structures inherent in the dataset. Future approaches employing fan-curated data may include the juxtaposition of different datasets dealing with a common subject, comparative examinations and, more generally, the potential for tackling an entire context of cultural production at once.

Appendix 1. Data visualization

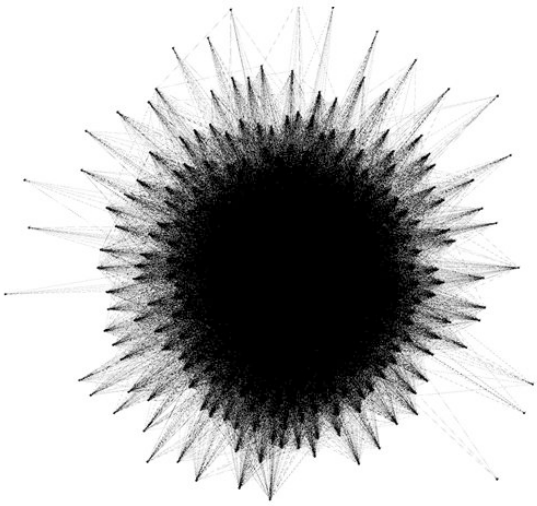

Figure 1. A visualization of the entire VNDB character trait dataset.

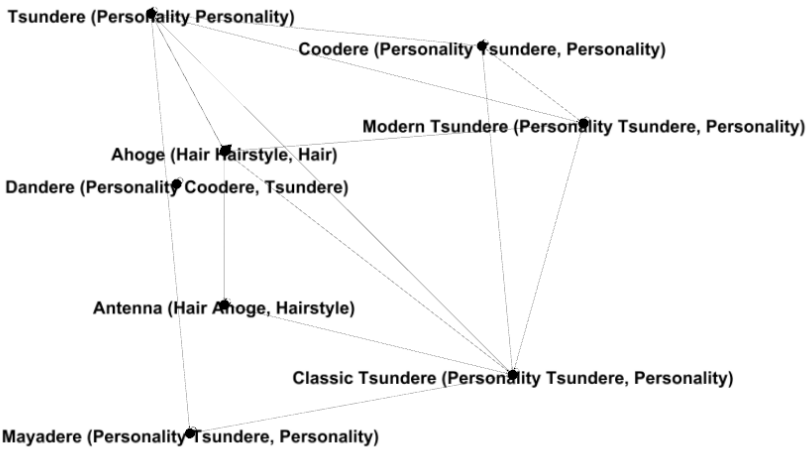

Figure 2. A visualization of a selection of traits from the VNDB character trait dataset (before and after).

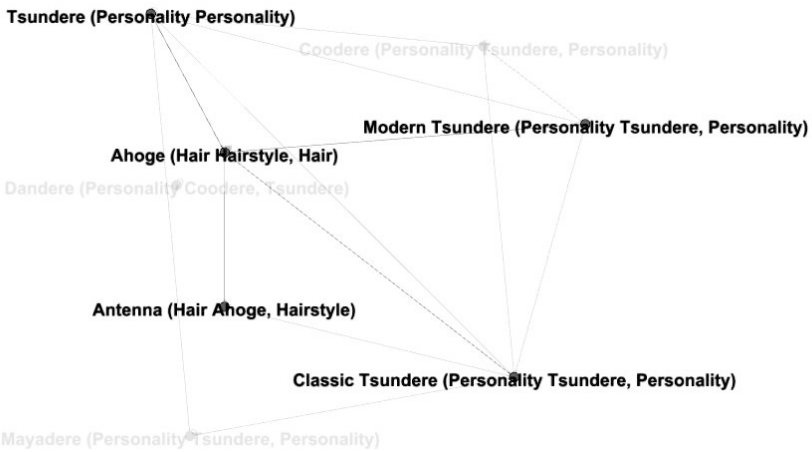

Figure 3.
Trait co-occurrence visualized as a graph. Figure 1 shows the entire VNDB dataset visualization. The number of nodes and connections is too big for to be viable. Figures 2 and 3 display a limited selection of the graph shown in figure 1, focused on the "Ahoge" character trait and traits which are either directly co-occurring with "Ahoge" or co-occurring with a third, common trait. Figure 2 shows all traits within the selection, while Figure 3 highlights all traits directly connected (co-occuring in the same character entry) with "Ahoge" in black. While all these traits are connected in some way, there is a clearly identifiable "inner core" of traits which is worthy of examination: are characters with an "Ahoge" hair more likely to have a "Tsundere" personality?

Appendix 2. Character Data Distribution and Sub-Networks

Table 1. Comprehensive Dataset.
Modularity distribution: 3 Communities
Eccentricity: 69.59% of traits have an eccentricity of 2.0; 30.41% of traits have an eccentricity of 3.0.

Sub-Network	10 most representative traits (Eigenvector Centrality)	Percentage
1	'Short Hair', 'Brown Hair', 'Young Adult', 'Black Hair', 'Amber Eyes', 'Parted to Side', 'Brown Eyes', 'Shirt', 'Red Eyes', 'Necktie'	47.57%
2	'Blowjob', 'Doggy Style', Cowgirl, Missionary, Sitting Sex, Outdoor Sex, Handjob, Anal Sex, Quickie Fix, Group Sex	27.3%
3	'Pale Skin', 'Slim Body', Teen (Apparent age), 'Blue Eyes', 'Long Hair', 'Average Height', 'Waist Length+ (Hair)', 'Straight Hair, 'Blond Hair', 'Sidehair (Hair Tail),	25.13%

Table 2.1. Female Primary Characters Dataset.
Modularity distribution: 3 Communities.
Eccentricity: 39.75% of traits have an eccentricity of 2.0; 60.95% of traits have an eccentricity of 3.0.

Sub-Network	10 most representative traits by eigenvector centrality	Percentage
'1'	'Pale Skin', 'Slim Body', Teen (Apparent age), 'Virgin Sex, Waist Length+ (Hair), Sidehair (Hair Tail), School Uniform, Straight Hair, Average Height, Thigh-high stockings'	60.38%
2	'Blowjob', 'Doggy Style', Anal Sex, Cowgirl, Handjob, Long (Hair), Ahegao, Sitting Sex, Boobjob, Butterfly (Sexual Position)	35.73%
3	Thigh-High Boots, Corset, 'Pointed ears', Princess (Role), Olive (Skin tone), Sword, Crown, Rape (Subject of), Tattoo, Plate Armour	3.89%

Table 2.2. Female Side Characters Dataset.[7]
Modularity distribution: 7 Communities (5 and 6 insignificant at only one trait each).
Eccentricity: 0.09% of traits have an eccentricity of 0; 0.32%of traits have an eccentricity of 2.0; 96.98% of traits have an eccentricity of 3.0.; 2.6% of traits have an eccentricity of 4.0.

Sub-Network	10 most representative traits by eigenvector centrality	Percentage
1	'Pale Skin,' 'Slim', 'Average Height', 'Blue eyes', 'Young-adult', 'Tareme', Violet Eyes, Green, Watashi, Kind	37.35%
2	'Virgin Sex', 'Blowjob', 'Doggy Style', 'Cowgirl', 'Missionary', 'Vaginal Fingering', 'Sitting Sex', 'Boobjob', 'Group Sex'	26.73%
3	'Amber Eyes', 'Thigh-high Stockings', 'Tsurime', 'Big Breast Sizes', 'Red Eyes', 'Fighting', 'Headband', 'Bracelet', 'Gloves', 'Necklace'	23.39%
4	'Teen', 'School Uniform', 'Miniskirt', High School Student, Ribbon Hair Tie, Ribbon Tie, Hairpin, Knee-High Socks, Necktie, Pleaded Skirt	12.2%
5	'Maid's Dress', 'Maid's Headdress', Maid (Role), 'Sash', 'Comedian'	0.23%

Table 2.3. Male Primary Characters Dataset.
Modularity distribution: 6 Communities.
Eccentricity: 6.95% of traits have an eccentricity of 2.0. 92.95% have an eccentricity of 3.0. 0.1% have an eccentricity of 0.0.

Sub-Network	10 most representative traits by eigenvector centrality	Percentage
1	'Anal Sex (Subject of)', 'Blowjob (Engages in), 'Blowjob (Subject of)', 'Handjob', 'Male on Male Sex', 'Group Sex', 'Anal Sex', 'Sixty-Nine', 'Doggy Style', 'Outdoor Sex'.	32.74%
2	'Fighting (Engages in)', 'Death', 'Confinement', 'Murder (Engages in)', 'Avoidable Death', 'Teasing', 'Planning', 'Smart', 'Arrogant', 'Unarmed Fighting'.	28.86%
3	'Young Adult', 'Pale Skin', 'Trousers', 'Tall', 'Hosome', 'Slim', 'Blue Eyes', 'Amber Eyes', 'Belt'	25.43%
4	'Teen', School Uniform, High School Student, Ore, Average Height, 'Brown eyes, 'Childhood Friend', 'Classmate', 'Friendly', 'Friend'.	12.87%

7 Note: there are actually seven communities, but two of them have been omitted from this table due to them being formed by only one trait each: 'Tone Deafness (Subject of Disability, Health Related)' and 'Amphibian (Role Animal, Nature)'.

Table 2.4. Male Side Characters Dataset.
Modularity distribution: 3 Communities.
Eccentricity: 5.32% of traits have an eccentricity of 2.0. 94.48% have an eccentricity of 3.0. 0.21% have an eccentricity of 4.0.

Sub-Network	10 most representative traits by eigenvector centrality	Percentage
1	'Rape (Engages in)', 'Blowjob (Subject of), 'Male on Male sex', 'Cross-dressing', 'Bracelet', 'Anal Sex', 'Doggy Style', 'Sitting Sex', 'Missionary', 'Not a Virgin'	22,67%
2	'Tall', 'Fighting (Engages in)', 'Adult Body', Muscular, 'Grey hair', Suit, Death (Subject of), 'Black Eyes', 'Long Hair', 'Red Eyes'.	47.94%
3	'Short Hair', 'Pale Skin', 'Slim Body', 'Brown Hair', 'Trousers', 'Young Adult', 'Black Hair', 'Hosome', 'Brown eyes', 'Teen'	29.39%

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Comment by Cäcilia Sauer

Fan communities are all too often neglected as scientific source material. Be it a fan forum or a YouTube comment – they are frequently deemed not credible enough and, at best, are used to examine a particular social atmosphere.

Luca Bruno tries to show that fan pages and fan data can indeed be helpful when it comes to collecting data. In his article, he presents fan-curated data gathered as part of the Japanese Visual Media Graph (JVMG) research project, which he uses for a data-driven approach to visual novel games. Bruno posits that it is quite difficult to use conventional approaches to visual novel games, due to them being a production niche positioned in an intermedia layer between hobbyist/semi-professional production and the generalist media industry. On the other hand, visual novel games are extremely popular in Japan and, therefore, a huge amount of data can be collected through fan pages and forum, and, indeed, Bruno uses this as a basis for his research.

Despite focusing on a production niche such as visual novel games, Bruno's article successfully proves the potential of fan-curated data. This approach can certainly be beneficial to other research projects, specifically those lacking more "conventional" data.