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Understanding tag functions in a moderated, user-generated metadata ecosystem

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Abstract

Purpose – The purpose of this paper is to investigate tag use in a metadata ecosystem that supports a fan work repository to identify functions of tags and explore the system as a co-constructed communicative context.

Design/methodology/approach – Using modified techniques from grounded theory (Charmaz, 2007), this paper integrates humanistic and social science methods to identify kinds of tag use in a rich setting.

Findings – Three primary roles of tags emerge out of detailed study of the metadata ecosystem: tags can identify elements in the fan work, tags can reflect on how those elements are used or adapted in the fan work, and finally, tags can express the fan author's sense of her role in the discursive context of the fan work repository. Attending to each of the tag roles shifts focus away from just what tags say to include how they say it.

Practical implications – Instead of building metadata systems designed solely for retrieval or description, this research suggests that it may be fruitful to build systems that recognize various metadata functions and allow for expressivity. This research also suggests that attending to metadata previously considered unusable in systems may reflect the participants' sense of the system and their role within it.

Originality/value – In addition to accommodating a wider range of tag functions, this research implies consideration of metadata ecosystems, where different kinds of tags do different things and work together to create a multifaceted artifact.

Keywords Information systems, Knowledge management systems, Metadata, Fan culture, Tags, User-generated metadata

Paper type Research paper

Introduction

The problem of search and retrieval requires clear, coherent subject keywords in order to facilitate referencing across multiple sources. Preservation metadata, on the other hand, needs to be descriptive and comprehensive in order to allow future preservation workers to maintain the integrity of the record and to allow future users to understand the context. User-generated tags are not quite like subject categories and not quite like archival descriptive metadata. A tag like “hang onto your butts team” or “I have no idea what I'm talking about” seems particularly worthless when compared against either of these kinds of metadata. Instead, can we consider the case of user-generated tags in order to develop a more complete picture of metadata purposes, including purposes previously ignored? Within the information science context, research has been done on how user-generated metadata, specifically tags, can add value to materials (Marshall, 2009; Steinhauer *et al.*, 2011). In most of these studies, however, the tags in question are either sparsely descriptive, or considered to be not useful to others. Moreover, only a small portion of research on user-generated metadata considers the special case of content creators tagging their own content, rather than users tagging content made by others (He *et al.*, 2010; Kim and Rieh, 2011).

Fan fiction, on the other hand, has a rich history of tagging practices developed through multiple intersecting communities. While the idea of creative re-imaginings of other stories



has an extensive history, fan studies scholars trace the origins of contemporary “fandom” to the practices of Star Trek fans in the 1960s who exchanged stories of the main characters in all sorts of imagined adventures (Jenkins, 1992; Russ, 1985). These early fan fiction writers used specific metadata practices when distributing their works through in-person and mail networks; character names were used primarily in combination to indicate primary interpersonal relationships, and the author names were often pseudonymous. Ian Condry (2013), taking a media studies perspective about a set of games, offers a view of characters as generative platforms for fan interaction. Building on Jenkins’ pioneering work on fan cultures and their use of remixing as a primary form of engagement, Handley (2010) argues in a master’s thesis that fan fiction is a kind of conversation between fans and writers: writers and readers orienting themselves within a flexible, generative, dialectical system. This paper suggests that elements from original works such as characters present not just as generative platforms but as hooks for creators to pin down narrative possibilities. Fan fiction today is similarly imaginative, remixing characters, settings, and plot points from other works and engaging with expectations for narrative style. Metadata systems, too, may reflect this orientation to narrative components in a way that supports the generative flexibility that is idealized as fan fiction’s potential (Jenkins, 1992; Condry, 2013).

This research focuses on the Archive of Our Own, an online fan fiction site that allows authors to upload and tag their works with minimal management, and allows readers to explore works along a variety of paths. The fan fiction site functions primarily as a navigable repository with a networked database structure that relies on a unique combination of author-generated metadata and backstage volunteer federation (Johnson, 2014). Authors upload works to specific fan sub-communities, known as “fandoms,” and backstage volunteers work within these sub-communities. What the unique combination supports is one of the questions this research seeks to answer:

RQ1. What metadata functions might exist that are visible here, taking into account the history of fan fiction and the unique possibilities of this site with respect to communities?

Finally, there are unique possibilities in the original works themselves that highlight the functionality of fan fiction. This paper examines fandoms for three different digital games hosted on the site, each with a slightly different level of openness. Critic and philosopher Eco Umberto (1989) introduced the term “open work” to describe literary or artistic works which invite the reader to complete them – by making choices about what pages to read, or where the story should not go next. Digital games are particularly fruitful examples of open works as the objects themselves are designed explicitly around the player’s participation, and can be experienced differently with each playing. For example, the first *Mass Effect* game features a choice early on between two possible members of the player’s team. Whichever person the player chooses to be on the team is there through the entire trilogy, so there are effectively two versions of the team because of this choice. Each of the game fandoms in this research project has a different level of openness, driving the development of a nuanced understanding of how metadata can be shared across a community that may have experienced very different games.

There are three specific research questions for this project, each exploring one function of metadata use. First, specifically reflecting on the remixing heritage of fan fiction, what metadata elements identify pieces from the original works? Second, stepping more broadly, how do metadata elements such as tags reflect and comment on the author’s creative engagement with the original work? And third, imagining an alternate function, how do metadata elements such as tags help fan authors engage directly with other members of the community? In order to address these research questions, this paper constructs a typology identifying different kinds of tags used in the fan fiction repository.

Research setting

The following section introduces a distinction from narratology used to frame the exploration of the metadata system. Next, this paper briefly situates the fan work repository in its cultural context. Finally, this paper presents the metadata system of the repository by describing two key processes: author submission of metadata on their works, and the search and browse functions for readers to select works.

Story and discourse

One challenge of exploring metadata about fan works about original works is identifying referents. A concept from narratology, the study of narratives across media, can help here. In order to carefully discuss the subject, narratologists are careful about words like “narrative” and “story.” While there are a few slightly different breakdowns, narratology draws a basic distinction between the imagined events taking place in a tale, hereafter referred to as the story, and how the tale is told, hereafter referred to as the discourse. Splitting the narrative into layers does not mean that the narrative text has distinct parts, as only the discourse layer “embodied in the sign system...is more or less directly accessible” (Bal, 2009). Distinguishing layers does, however, allow for a more focused analysis of narratives that may be told in different ways; the fan fiction practice of remixing original works includes nuanced engagement with all layers of a narrative. The narratologist Gerald Prince (2003), drawing on an overview of accepted terminology in the field, defines story as “the content plane of narrative” and discourse as “the expression plane of narrative” (p. 21, p. 93). One particularly vexing sense of the distinction between the content plane of events and the expression plane of the telling is in narratives that are told out of order. For instance, in the *Legend of Zelda: Majora’s Mask* game, the player uses a time travel trick to repeat three days in the story until the game has been beaten. The player might play through events A and B on day one and day two, and then later go back and play through an event C from day one. In the timeline that is resolved at the end of the game, events A and C happen before B even though they were experienced out of order. Narratologists refer to the events in the order of timeline as the story order, and events in order of telling as discourse order. The story-discourse distinction is not limited to timelines, and includes aspects like perspective, tone, and character identity.

The repository

Fan fiction accommodates a variety of tagging practices (Johnson, 2014), with the caveat that user-generated tags are highly variable and often range in their descriptive utility (Marshall, 2009). Archive of Our Own’s tagging system combines author-generated tags with moderation by a team of volunteers (the “tag wranglers”). The repository does not use an explicitly controlled vocabulary like some other sites, but relies on the behind-the-scenes moderation to corral the tags into a meaningful system (Johnson, 2014). “User primacy” is one of the fundamental principles of this moderation team; described on a page on Archive of Our Own listing “Wrangling Guidelines,” this principle means that:

The users create the tags; we just sort them. [...] We do not change the tags on a user’s work unless they directly violate the Terms of Service, and then only with specific instruction from the Abuse committee[1].

Archive of Our Own does, however, combine tags with controlled categories in order to facilitate the classification and filtering of texts. Johnson (2014) describes this combination of user-generated tags and moderated tags in Archive of Our Own as a hybrid of two other models of tagging in her study of fan fiction archives. The first model she describes is “free tagging” or folksonomy approaches, as in LiveJournal’s freeform tag entry (Johnson, 2014, para. 3.1). Free tagging systems can have high variability in tag use and quality, but allow

for creative and interpretive tagging practices (Jørgensen *et al.*, 2014). The second model is a “controlled vocabulary” as implemented by FanFiction.net, with drop-down menus of top-down classification terms (Johnson, 2014, para. 3.5). The controlled vocabulary approach resolves the free tagging model’s problem of great semantic variability, but replaces it with the problem of context-specific and residual categories (Star and Bowker, 2007). For example, Johnson (2014) points out that an author working within a small fandom might not find categories that fit for her stories, and would have to rely on the less-effective keyword search mode (para. 3.5). A novice reader of FanFiction.net might never find this story because they only knew to browse by established tags. On the other hand, the “curated folksonomy” approach that Archive of Our Own implements blends the context-specificity of free tagging with the moderation of a controlled vocabulary (Bullard, 2016). This blend enables a flexible and browsable repository configuration that supports a variety of interactions (Johnson, 2014).

When an author uploads a work to Archive of Our Own, she is presented with a form for metadata submission that includes required fields, suggested fields, and one open category (see screenshot in Figure 1). Each short text entry box will provide suggestions for autocomplete as the author begins typing a tag. Archive of Our Own’s reliance on free text entry with autocomplete suggestions is a key structural component of its “curated folksonomy” model, straddling the line between a rigid, retrieval-oriented system and an open, descriptive system. Zubiaga *et al.* (2011) argue that tag suggestions such as a list of previously used tags impact user-generated tag behavior by reducing the diversity of tags, which they define as the measure of unique tags including variants and alternate spellings. Archive of Our Own’s flexible configuration of free text entry with autocomplete suggestions strikes a middle ground.

The first three categories, for “Rating,” “Archive Warnings,” and “Fandoms,” are required for each new work. Authors must pick a single rating for their whole work, ranging from “General” to “Mature” and “Explicit.” Authors must select from a list which, if any, archive warnings apply to their work, indicating specific kinds of content that may be

The screenshot shows the 'Post New Work' form on Archive of Our Own. At the top right, there is a button that says 'Import From An Existing URL Instead?'. Below the title, there is a section for 'Tags' with a note: 'Tags are comma separated, 100 characters per tag.' The form is divided into several sections, each with a question mark icon for help:

- Rating***: A dropdown menu currently set to 'Not Rated'.
- Archive Warnings***: A list of checkboxes for various warning categories: 'Choose Not To Use Archive Warnings', 'Graphic Depictions Of Violence', 'Major Character Death', 'No Archive Warnings Apply', 'Rape/Non-Con', and 'Underage'.
- Fandoms***: A text input field with a note below it: 'If this is the first work for a fandom, it may not show up in the fandoms page for a day or two.'
- Category**: A dropdown menu with options: 'F/F', 'F/M', 'Gen', 'M/M', 'Multis', and 'Other'.
- Relationships**: A text input field.
- Characters**: A text input field.
- Additional Tags**: A text input field.

Source: Screenshot provided by author

Figure 1.
Metadata entry
interface when
uploading a work to
Archive of Our Own:
each category of tags
solicited is visible

objectionable or intended for mature audiences. Finally, authors must identify one or more “fandoms” to which their work belongs. The fandom tags take the form of titles of original works, such as *Mass Effect* or *Overwatch*, with additions indicating the media form of the original work, as in *Overwatch (Video Game)*. Fandoms may also identify specific works within a broader intellectual category of original work, as with the *Legend of Zelda* fandom comprised of each of the individual *Legend of Zelda* games. Fandoms are key aspects of the metadata system, as the backstage volunteers managing tags are assigned to a specific fandom and thus moderate tags within a fandom. Fandoms in the system function simultaneously as identifiers of source material by noting the original works and as markers of community by positioning works within other works with similar content and tag moderation.

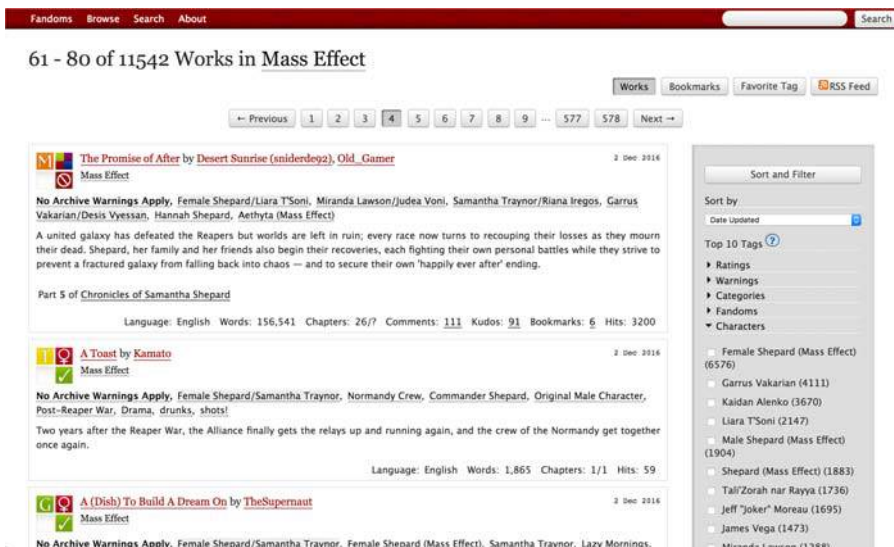
Archive of Our Own also solicits non-required tags in three specific fields: “Category [of romantic or sexual pairing],” “Relationships,” and “Characters.” These three specific fields draw on the history of fan fiction as a way of exploring alternate possibilities of character interaction, such as imagined same-sex relationships in otherwise conservative works. The “Category” field allows authors to select one or more applicable categories from a list with elements like “M/F,” “M/M,” and “Other.” The “Relationships” and “Characters” fields are, for two reasons, more structured than an author might assume at first glance at a free text entry box. First, the system suggests autocomplete options when a fan author begins typing, reducing the chance of variant spellings of established character names. These autocomplete options for character names often include the original source, such as “Link (*Legend of Zelda*).” Second, volunteer moderators heavily interact with these tags specifically, synonymizing character names across variants. The term “structured character tags” is introduced later in the findings section to reference both qualities of these kinds of character tags: they are specific and wrangled.

Finally, the last field is just labeled “Additional Tags.” Here, an author is free to include any tags they wish. The repository provides suggestions for tags in this field as well, although they are not moderated with the same attention as character and relationship tags. For this reason, this paper uses the term “freeform tags” to note the greater variability possible in these tags. Authors use this field in widely ranging ways, even sometimes duplicating the structured character or fandom tags. This research focuses on this field, as it closely reflects the author’s direct engagement with the metadata system.

Tags are not just created by authors in a vacuum, however. Tags facilitate browsing and search for users of the site as well. This paper does not explore the practices of users looking for works, but understanding that tags are read as well as written is crucial to understanding what they do. Within the fan fiction repository, tags primarily facilitate browsing for new content in two ways. First, a single tag, such as a fandom tag, will return a list of works, and a user can further filter results based on other tags. Second, a list of works in Archive of Our Own displays a set of metadata for each work in the list to provide potential readers with a top-level overview (see Figure 2). This set includes basic metadata such as title, author, and date information, as well as the more complex tags.

Tags, therefore, work in both ways simultaneously in practice: a user might search for a fandom tag, find a list of works, browse the resultant tagsets to find a freeform tag of interest, and then decide to click on that work. Archive of Our Own’s structure supports this model of navigating the repository, offering various entry points such as fandom, common tags, or authors, and offering sort and filter options to combine metadata facets. Archive of Our Own’s design clearly facilitates a kind of user interaction, berrypicking, first identified by Bates (1989): a user’s queries evolve based on the contextual information solicited by prior queries.

Later this paper presents several full tag blurbs for analysis. The blurbs reflect the browse interface built into Archive of Our Own. For instance, the work titled “A Toast” by



Note: A “Sort and Filter” pane on the right allows the user to narrow down the list of works by facets like character tags, 10 of which are recommended based on frequency of use in a fandom
Source: Screenshot provided by author

Figure 2. Browse interface for Archive of Our Own, showing a list of works in a specified fandom and the tagsets for those works

the user Kamato features a required archive warning tag, one structured relationship tag (“Female Shepard/Samantha Traynor”), three structured character tags (“Normandy Crew,” “Commander Shepard,” “Original Male Character”), and four freeform additional tags (“Post-Reaper War,” “Drama,” “drunks,” and “shots!”). When presenting these tags for analysis, this paper quotes the entire tagset, bolds the required tags, italicizes the structured tags, and leaves the freeform tags unformatted. So, this tagset would appear as:

No Archive Warnings Apply, *Female Shepard/Samantha Traynor, Normandy Crew, Commander Shepard, Original Male Character*, Post-Reaper War, Drama, drinks, shots!

This formatting reflects the original presentation of Archive of Our Own’s metadata system while highlighting the repository’s structured and freeform tags.

Methods

The goal of this research was to develop a preliminary typology by which to understand the various kinds of tags used in Archive of Our Own. The typology is then used to identify kinds of tags that address the specific research questions:

- RQ2. What metadata elements reflect pieces of the original works?
 RQ3. How do metadata elements reflect on the author’s engagement with the original work?
 RQ4. How do metadata elements help authors engage directly with members of the community?

The typology was developed with a workflow taking techniques from the interpretivist social science method of grounded theory and integrating these into a humanistic practice of close reading (Charmaz, 2014; Smith, 2016). The research began by constructing a purposeful sample using a theoretical grounding in narratology and fan studies (Morse, 2007; Prince, 2003; Jenkins, 1992). Then, a constantly comparative, contextual, open coding

technique was adapted from grounded theory to develop an analytic framework (Bryant and Charmaz, 2007; Charmaz, 2014). Finally, this analytic framework was used to identify and close read exemplars of tag types in context to reflect on the processes implicated in the research questions: the various functions of tags in Archive of Our Own.

Developing the sample

This section describes the intellectual basis for sample selection as well as the technical aspects of scraping and parsing the data. Fan studies scholars identify characters and plots as driving hooks for fan engagement (Condry, 2013; Jenkins, 1992). The concept of open works, discussed above, suggests that the engagement might be different given different levels of openness. As the author’s metadata creation is one part of their engagement, tags too may reflect the openness of works. Character and plot serve as two dimensions of openness.

One dimension distinguishes between games with flexible player characters, where the player can strongly influence the character’s identity and actions, and games with fixed player characters, where the player cannot influence the player’s identity, including goals and histories. The other dimension classifies games into two basic categories: games with no fixed plot, and games with a fixed plot. Even games with a “fixed” plot are not identical between playthroughs; this term only indicates that there are major events arranged in some sort of order for the player to experience. In order to interrogate the possible effect of narratological differences on metadata practices, these intersecting dichotomies of character and plot constructed a grid (Table I). Each box in the grid determined the selection of a single “fandom” within Archive of Our Own that was well-represented with over 2,000 works.

This process resulted in the selection of three digital game fandoms to explore: *Overwatch*, the *Mass Effect* series, and *The Legend of Zelda* series. *Overwatch* is an online multiplayer first-person shooter game with a large cast. When entering into a match, players select a character out of this cast and then join a group of other players to accomplish objectives like eliminating the enemy team or escorting a moving object. From match to match, players do not affect the characters’ identity or the background plot, which only offers a sketch of the world and motivations for the characters. Though characters have strong identities, these are expressed more in their function as vehicles for the player than as drivers of narrative in game. In fandom, however, *Overwatch* offers a robust cast of characters for fan authors to remix. The *Mass Effect* series is a trilogy of role-playing games where the player plays as Shepard, the human commander of a small ship in a far-off science fiction future. Over the course of the three games, the player decides what kind of person Shepard will be, all while trying to save the universe with a diverse crew. The player’s choices also affect the events presented in the games, including possible romantic relationships with members of the ship’s crew. In fandom, this flexibility is reflected in practices like multiple versions of the Shepard character tag leading to the same back-end tag. Finally, *The Legend of Zelda* series of games is a long-running set of individual games each set in a world known as Hyrule, each featuring a hero, always called Link, and a heroine, always called Princess Zelda, trying to save the world from a villain, always called Ganondorf or Ganon. The player performs as Link and experiences a structured narrative with only minimal player choice in how to order events. In fandom, the three main

Table I.
Intersection of narrative flexibility and character flexibility in fandoms posted to archive of our own and number of works publicly accessible

	No fixed plot	Fixed Plot
Flexible Player Character	–	Mass Effect (11822 works)
Fixed Player Character	Overwatch (9399 works)	The Legend of Zelda (2735 works)

characters and their various relationships drive narratives. The different treatments of character and plot in each of the three original works allow for an interrogation of the relationship between original source and remix in the metadata representation of the fan work.

Working with a programmer, we created a script to parse all metadata, focusing on tags, from works in the three fandoms selected: “Mass Effect,” “Overwatch,” and “Legend of Zelda and Related Fandoms.” The script retains the metadata about the tags, such as whether a tag is a character tag or a fandom tag. The script parses and retains metadata for all works publicly available in Archive of Our Own on January 15, 2017. From “Mass Effect” the script captured metadata for 11,822 works, from “Overwatch” 9,399 works, and from “Legend of Zelda and Related Fandoms.” 2,735 works. In total, the script scraped metadata for 24,776 works, including a handful of works from other fandoms. 250 works at random in each fandom constituted a preliminary sample for exploration. The corresponding tagsets were coded until reaching a point of theoretical saturation at approximately 800 tags into each sample, where no new tag categories emerged from the data.

Analytic workflow

This section describes the two major steps in the analysis process: coding the tags, and then reflecting on the codebook and reading tagsets in context. Two overlapping frameworks guided the analysis: first, to consider the tags as separate entities and identify associations between tags, and second, to consider tags as constitutive of the “metadata front” that appears in the browse interface as a surrogate for the fan work. The first framework suggests coding tags as independent elements and attempting to find any interesting associations between tags and other metadata elements. To implement this approach, tags were primarily treated as individual units of analysis that apply to a single “fan work.” The second analytic framework, where the unit of analysis is the entire metadata set for a work, suggests coding tagsets through multiple passes of interpretive, open coding. This workflow relied on interpretive methods, particularly close reading, to understand the expressivity of tags in a system like Archive of Our Own.

The analytic workflow drew on techniques from grounded theory analysis, such as open coding, constant comparison, and theoretical saturation (Charmaz, 2014). Open coding is a process of assigning categories to the units of analysis, where the categories are created through the process of coding rather than from a pre-existing taxonomy. In this research, the first pass was used to take notes on the possible contents of a tag, such as “this tag references a mental issue.” Then, reflection on these notes and the technique of constant comparison was used to develop categories for tags and place those categories in relationships. Constant comparison refers to the continual process of distinguishing between categories by using the units of analysis as key points of interrogation. Finally, as the goal is to develop an understanding of how many kinds of tags are in use, rather than to identify how many tags are in each category, reaching theoretical saturation determined the stopping point. Theoretical saturation refers to the point in grounded theory analysis at which new categories are no longer emerging from the data (Morse, 2007). These techniques complement the broad humanistic methodology of reading which involves placing texts in context, identifying areas of attention, and close reading those areas of attention. Salient areas of attention are known as exemplars in qualitative social science research and offer particularly rich cases of concepts emergent from the data (Lindlof and Taylor, 2011). After developing the codebook as a set of categories in a particular structure, several categories were selected for closer attention according to the research questions, and used these categories to identify tagsets to close read as exemplars.

Findings

The research questions asked how metadata identify elements from original works, how metadata reflect on the author’s creative engagement with original works, and how

metadata can help authors join a conversation with a community. In order to answer these questions, this paper draws on contextual readings of tags in action to understand the function of a tag, and position that function in a preliminary, evolving typology. Again, the goal is to develop the typology and identify the different kinds of tags and their relationships, rather than to identify how many tags of each type are represented. Descriptive statistics support only this goal and elaborate on the different kinds of tags, they do not assert the distribution of tags across the repository or even the three fandoms in question.

Despite the guiding frame of significant narratological differences between each of the three original works, the kinds of tags were more similar than different, enabling the typology to travel across fandoms. Broadly, the tags fit into two main categories of declarative tags and expressive tags. Declarative tags such as “Alternate Universe - Science Fiction” or “antagonist!Zelda” assert the inclusion of specific elements in a fan fiction work and make up the vast majority of the tags in my exploratory samples, representing 93 percent of coded freeform tags in the “Mass Effect” sample, 77 percent of freeform tags in the “Overwatch” sample, and 84 percent of freeform tags in the “Legend of Zelda and Related Works” sample. The kinds of tags labeled expressive, such as “hang onto your butts team,” are stylistically different, drawing the reader into a conversation, and used much less frequently, with 7 percent of coded freeform tags in “Mass Effect,” 23 percent of freeform tags in “Overwatch,” and 16 percent of freeform tags in “Legend of Zelda and Related Works.” Despite the ostensibly low representation of expressive tags, these tags are some of the most challenging tags for the system’s moderators and browsers and the richest tags to close read.

Research on user-generated tags like that of Marshall (2009) and Marlow *et al.* (2006) suggests that tags are different from other kinds of metadata. Tags can be freeform, with semantic possibility beyond more structured metadata either generated automatically by a system or selected from a list by a user (Jørgensen *et al.*, 2014). More importantly, however, tags are not required, even in a system like that of Archive of Our Own. These features identify tags as a rich space for exploring metadata use in information organization systems. Marlow *et al.* and Jørgensen *et al.* (2006, 2014) find that there is great variability in the frequency and growth of tagging, where some users tag widely and often, and some users tag infrequently. Over the entire dataset of uncoded metadata for 24776 works, the mean number of relationship, character, and freeform tags was low (1.38, 4.34, 4.95, respectively), but the maximum number used was high, with as many as 80 relationship tags in a single tagset, as many as 180 character tags, and as many as 123 freeform tags. As none of those three categories are required by Archive of Our Own, the minimum for each is zero tags.

Marshall (2009) attempts to explore a kind of vocabulary problem (Furnas *et al.*, 1987; Buckland, 1999) by exploring user-generated tags on Flickr, and notes four different categories for tag words: “place, artifact, context, and story” (p. 7). Place tags are the most common in Marshall’s set of Flickr data, then “main visual attribute” in a quarter of the tagged photos, and last most common are contextual tags that indicate a relationship between the photo and the uploader. Similarly, structured character tags dominated the metadata space within a single fandom, leaving out either Archive of Our Own’s required warning and category tags, or the multi-element relationship tags that combine two or more structured character tags. For “Mass Effect,” 54 percent of the character and freeform tags were structured character tags. For “Overwatch,” 42 percent of the character and freeform tags were structured character tags, and for “Legend of Zelda and Related Works,” 49 percent of the character and freeform tags were structured character tags. Structured character tags were the single largest category of tag, but these tags do not require as much contextual reading to parse as the other, more freeform tags. Structured character tags have clear structural cues, such as formal tag type and visible link to a canonical form, identifying

them as such. These structured character tags also have clear differences in function and scope from the freeform tag category for character identity in the typology, and the section below on “Tags that Reflect” describes some of these differences.

Overall, users deployed declarative tags describing narrative elements like setting, genre, tone, and concept similarly across the three game fandoms, with shorter, declarative tags that focus on a single idea and use more formal language. Tags such as “Drama” appeared in all three fandoms. Archive of Our Own suggests previously used and wrangled tags as completions when an author begins typing their tags in; these suggestions may affect the tone of declarative tags that clearly indicate a single, well-defined concept. Variations in tag elements like character tags reflected the language of each game fandom. For example, freeform tags augmenting character tags in the “Mass Effect” fandom drew on the specific language of the game, marking “Paragon Commander Shepard” as a good character according to the original game’s visible moral compass. Similarly, references to specific parts of the game narrative, such as a tag for “post-Destroy ending,” reflect both plot and paratextual commentary: tags like these are saying, this fan fiction piece takes place in an imagined world where this particular ending of the game was the one to have happened. Literary theorist Gerard Genette (1997) coined the term paratexts to refer to textual elements framing the narrative work, such as titles, prefaces, indexes, and subject classifications. A tag like “post-Destroy ending” not only identifies a plot element, but identifies a community consensus description for the setting of the work. Because the declarative story and discourse element tags were so diverse and so common, the complexity in these categories was helpful in distinguishing the different work that such tags might be doing and in questioning how authors deployed tags in concert. The context for a tag may change the work that it does. For example, tags such as “alcoholism” and “depression” are actually used to describe plot points, rather than to make statements about character identity.

Declarative tags like those discussed above assert what components are involved in the fan fiction piece, marking elements that a reader may use to decide whether she wishes to read a piece or not. Some tags work not to assert, but to express commentary about the work. These tags are longer, informal, and can focus on multiple concepts. If the declarative tags look more like single words, these tags look like sentences. One particularly rich example of this kind of expressive tagging comes in the following tagset:

Creator Chose Not To Use Archive Warnings, *Reaper* | *Gabriel Reyes & Angela “Mercy” Ziegler*, *Angela “Mercy” Ziegler*, *Lena “Tracer” Oxtan*, *Winston (Overwatch)*, *Jesse McCree*, *Widowmaker* | *Amélie Lacroix*, *Reaper* | *Gabriel Reyes*, *Hana “D.Va” Song*, *Sombra (Overwatch)*, *Alejandra (Overwatch)*, *Soldier: 76* | *Jack Morrison*, *Ana Amari*, *Genji Shimada*, *Tekhartha Zenyatta*, hang onto your butts team, I told you I could write more than one-shots, anyway no shipping to be found here, not even a hint of a ship, just some good ole character studies, and a lot of yelling, anyway AUish?, it’s kind of on its own timeline, timelines are hard in Overwatch, the age gap is less between Mercy and Reaper but he’s still older, it’s like a weird detective story except neither Mercy nor Reaper want to be detectives, Post-Canon, it’s multi-chapter time[2].

This tagset goes straight from the structured tags for warning, character, and relationships to freeform tags that read more like a personal recording than a set of, say, subject keywords. The author directly addresses the readers of this work as “you” in more than one tag, speaking informally and addressing fandom-specific reader expectations of elements such as “shipping,” writing imagined romances between characters. The author then moves from expectations to reality, asserting the genre of the work, “character studies,” and the canonicity of the work, “A[ternate]U[niverse]ish?” The author, however, steps back and modifies the assertion of canonicity with a reflection on the original game and its treatment of canonicity and timelines. Next, the author uses tags to express how, exactly, their work is “AUish.” Modifications to character attributes are explicit, including goals. The “Post-Canon” tag, which would be fitting in many other tagsets that avoid the more expressive, multi-word style

of tags, seems odd here but can be considered a more canonical reflection of a statement that is already in the tagset, possibly due to an autocomplete suggestion. And finally, the author returns to reader expectations again, explicitly noting that this work will be long. This tagset claims narrative elements such as character, genre, and canonicity, and uses those elements to reflect on the writing process, expectations for reading, and the original game itself.

The coding process and analysis of exemplars formed the basis of a typology oriented around these two stylistic categories for tags, declarative and expressive. The declarative tags cover the majority of tags, and use short, straightforward, formal language to indicate single elements of a fan work such as setting, genre, or character. The declarative category has two categories within it, for tags describing story elements and tags describing discourse elements. The typology draws on theoretical grounding in the story-discourse distinction described above and uses the story element to describe tags that note what is in the story (e.g. setting, character), and the discourse element to describe tags that note what is around the story (e.g. genre, canonicity). Both the story element and discourse element categories have many subcategories under them, which can be seen in the full typology in Appendix. The typology also draws on scholarly work on character representation in digital games to help contextualize character tags in the repository (Vella, 2014). The table below lists only a few salient examples of subcategories to illustrate the range of tags. In contrast to the declarative tags, the expressive category of tags describes tags with longer, complex, informal language reflecting on one or more aspects of the fan work conceived broadly, including the fan community and tagging practices. These expressive tags will be explored in depth in the discussion section below (Table II).

The detailed typology may be seen in Appendix.

Discussion

Tags that identify

The first research question asked how elements from the original work are indicated in tags on the fan work. Some tags assert in a straightforward way the elements that appear in the fan work, but do not necessarily indicate the source in the text of the tag. The straightforward tags are classified as story element tags in the typology. Straightforward identification of contents is a common understanding of public tag function, featured in several studies of user-generated tags. For instance, Marshall describes four major kinds of tags on the image-hosting site Flickr: tags about place, artifact, context, and story. The first two categories Marshall (2009) identifies identify either the location of a photo or the contents in it, and are the most common kinds of tags in the dataset (p. 247). In a study of collaborative tags on the social bookmarking site Delicious, Golder and Huberman (2006) define seven categories of tags, five of which “identify” properties of the bookmark (p. 203). In the context of the fan fiction repository, tags that identify elements in a straightforward, declarative, general fashion

Table II.
Summary of typology with sample sub-types and examples of tags in each sub-type. Full typology may be seen in Appendix

How it says it	What it is	What it is (redux)	Examples
Declarative	Type I: story elements	Character identity	“Antagonist/Zelda”
	Type II: discourse elements	Location	“modern hyrule”
		Genre	“Hurt/Comfort,” “Romantic Comedy”
Expressive	Type III: expressive notes about...	Canonicity	“Alternate Universe - College/University,” “Follows main Overwatch timeline”
		Writing process	“How Do I Tag,” “More tags as I go”
		Reflection on narrative	“Hold on to your hats kiddos,” “You’re about to see why Blackwatch wanted to hire Jesse in the first place”

are the most explicitly oriented towards retrieval, and fit into the typology in the story elements category.

Story element tags indicate singular ideas that are used in the fan work. As such, the set of story element tags offers a summary of what is included in the fan work. Out of the story element tags, authors use structured character and setting tags most prominently to reference elements from the original works:

No Archive Warnings Apply, *Vaati/Zelda*, *Vaati (Legend of Zelda)*, *Zelda (Legend of Zelda)*, *Green Link*, *Red Link*, *Blue Link*, *Vio Link*, *Original Male Character(s)*, *Helmaroc King*, *Onox (Legend of Zelda)*, *Mogmas (Legend of Zelda)*, Romantic Comedy, Mild Language, Minor Violence, Slow Burn, Arguing, Hate to Love, Happy Ending, Hijinks & Shenanigans[3].

In this blurb, elements from the original work are limited to structured character tags, entered separately (in italics above). All of the character and relationship tags, except for the “Original Male Character(s)” tag, reference characters found in the original source: *The Legend of Zelda: Four Swords*. Some of these tags are qualified with the fandom “(Legend of Zelda)”, and likely were selected from an autocomplete suggestion by the author. Some of these tags are qualified by character features, such as “Green Link” which references one particular version of the character of Link. The structured tags, entered by fan authors into specific categories, identify properties of the fan work in constrained categories defined by the structure of Archive of Our Own rather than an open-ended solicitation. Because of the constraints, even though these tags are not general, they are strongly represented in the fan fiction repository. Golder and Huberman (2006) assert that the most common tags in a collaborative tagging system are those tags that identify information extrinsic to the tagger, and are widely understood by the broadest audience (p. 204). In the context of Archive of Our Own, the structured character and relationship tags that are specific to a fandom and wrangled by the volunteer narrators fit into this category.

Fan authors also use specific event and concept tags in the freeform category in ways matching the original works. The *Overwatch*-specific tag “biotic” is a particularly rich example of this practice, where the term for a robot or android in the original work is used in a tagset to reference particular characters or themes. The idea of conflict between humans and “biotics” is prominent in the original setting. The difficulty often lies in understanding which element tags are actually from the original work, and which tags are not. Some of the practices discussed in the following section begin to address this problem.

Tags that reflect

Part of the creative engagement of fan fiction is in remixing aspects of the original work (Jenkins, 1992), and the second research question asks how tags reflect on the creative engagement. Some story element freeform tags that reference original story elements hint at remixing. Freeform tags that reference story elements that are already represented in Archive of Our Own’s metadata structure, may include an explicit identification of how those original story elements are modified in the fan work. Discourse element tags directly engage with the question of how the fan work is told, invoking general and fandom-specific genres like “Romantic Comedy” or “Hurt/Comfort.”

There are different kinds of modified story element tags which can be seen in the following tagset. The two specific tags that are underlined are discussed in further detail below:

Graphic Depictions Of Violence, *Malon/Ilia (background)*, *Ganonдорф/Link (Legend of Zelda)*, *Link (Legend of Zelda)*, *Ganonдорф*, *Zelda (Legend of Zelda)*, *Navi (Legend of Zelda)*, *Legend of Zelda – Ensemble*, *Dark Link*, *Sheik*, *Phantom Ganon*, Alternate Universe – Science Fiction, Alternate Universe – Cyberpunk, Alternate Universe – Dystopia, Alternate Universe – Zombies, sort of not really, Pseudoscience, Antagonist/Zelda, Conspiracy, Alternate lore, Riffs on several games, more tags to be added as we go along, Technobabble by a Tech Dummy, I have no idea what

I'm talking about, Fairies are AIs, Phantom Ganon is actually a character not just a puppet, trans OC, FTMOOC, Human Experimentation, Implied Cannibalism, essential moral: corporations are Bad, that's actually not it but whatever, Asexual Link, Androids, Clones, Clones who are also androids, The Goddesses aren't actually divine but they do love to play god[4].

The structured character tags in this set, italicized, do not deviate from the canonical versions. Some character tags in the freeform tagset, however, do indicate how the author departs from the canonical understanding of certain characters. Golder and Huberman's (2006) breakdown of collaborative tagging practices includes similar groups of tags that "refine categories" or "identify qualities" (p. 203). Golder and Huberman's breakdown, however, imbues the first group with extrinsic value and the second group with subjective value. Here, however, tags such as modified character tags that highlight qualities or changes are necessarily perspectival, making a claim about the relationship of the fan work to the original work. For instance, the author uses the tag "Asexual Link" to assert the sexuality of a character in the fan work that may be different from what a reader would assume. In the original game, references to Link's sexuality are extremely muted, and at no time is it specified. Cultural conventions imply that Link is likely a heterosexual man or boy (depending on the game) romantically interested in Princess Zelda. This author's use of the tag, "Asexual Link," opens a conversation with the original work by specifying how the author interpreted the original work for the purpose of the fan work.

Specific conventions for modifications to story element tags exist, developing through communities of practice, as seen in Johnson's (2014) study of three different fan work communities. One prominent convention in fandom is the "qualityelement" style seen in the above tagset as "antagonist!Zelda." This tag identifies Zelda as a component of the fan work, but explicitly notes what changes were made to the imagined "original" version of the story element in question, "Zelda (Legend of Zelda)." In this case, the author positions Zelda not as a protagonist but as an antagonist, with some modified traits that may be foreshadowed in the other freeform tags. This author uses freeform tags to repeat some of the information in the structured character tags, except with the modifications that make up the story.

Tags that express

Finally, the third question asks whether and how fan authors communicate with their audience, including other fan authors and readers. The tags that seemed not to fit with the other categories also answer this third research question while opening up a new framework for understanding the function of metadata: these are the more expressive, conversational tags, sometimes called "tumblr-style" by metadata volunteers in order to identify them as unique, sentence-like tags that frequently use personal pronouns[5]. These tags have major stylistic differences, as they are longer, more informal, speak directly to a reader, and are not wrangled into browsable categories by volunteers. Some of these tags reflect on the process of writing or tagging, and some of them hint at what reading might be like. Some, however, comment on things that are also included in story element or discourse element tags, like characters, setting, or canonicity. One particularly rich example of this kind of commentary comes with the following tagset, first shown earlier in this paper:

Creator Chose Not To Use Archive Warnings, *Reaper* | Gabriel Reyes & Angela "Mercy" Ziegler, Angela "Mercy" Ziegler, Lena "Tracer" Oxtan, Winston (Overwatch), Jesse McCree, Widowmaker | Amélie Lacroix, *Reaper* | Gabriel Reyes, Hana "D.Va" Song, Sombra (Overwatch), Alejandra (Overwatch), Soldier: 76 | Jack Morrison, Ana Amari, Genji Shimada, Tekhartha Zenyatta, hang onto your butts team, I told you I could write more than one-shots, anyway no shipping to be found here, not even a hint of a ship, just some good ole character studies, and a lot of yelling, anyway AUish?, it's kind of on its own timeline, timelines are hard in Overwatch, the age gap is less between Mercy and Reaper but he's still older, it's like a weird detective story except neither Mercy nor Reaper want to be detectives, Post-Canon, it's multi-chapter time.

The freeform tags for this work could conceivably be rewritten as something like the following: “Multi-chapter story,” “Character Studies,” “AU,” “Detective Fiction,” “Non-Romantic.” But they are not! The author is committed to the conversational style of tagging, and the analysis must respect that choice. These kinds of tags serve primarily as reflections of the fan author’s sense of involvement in a community, inducting readers as conversation partners. While these conversational tags can and do reflect on the same subjects as the more declarative tags, they do so differently and thus function as part of a conversation about what it means to be a member of a fan community, rather than as a step in a search query.

In addition to stylistic effects, these kinds of tags also rely on their relationship to other tags in the set. Tags can either set up following tags, as in the example above, or comment on previous tags. While the declarative tags may relate within a tagset by referencing the same element multiple times, these conversational tags directly speak to surrounding tags. In the example above, “hang onto your butts team” declares nothing about the content of the fan work, but instructs the reader of the tagset to prepare to have her expectations shattered by the following tags, and in turn, by the fan work. Conversational tags can also comment on preceding tags. One of the tagsets shown earlier in the section on tags that reflect shows several examples of retrospective commentary:

Graphic Depictions Of Violence, *Malon/Ilia (background)*, *Ganondorf/Link (Legend of Zelda)*, *Link (Legend of Zelda)*, *Ganondorf, Zelda (Legend of Zelda)*, *Navi (Legend of Zelda)*, *Legend of Zelda – Ensemble*, *Dark Link*, *Sheik*, *Phantom Ganon*, *Alternate Universe – Science Fiction*, *Alternate Universe – Cyberpunk*, *Alternate Universe – Dystopia*, *Alternate Universe – Zombies*, sort of not really, *Pseudoscience*, *Antagonist!Zelda*, *Conspiracy*, *Alternate lore*, *Riffs on several games*, more tags to be added as we go along, *Technobabble by a Tech Dummy*, I have no idea what I’m talking about, *Fairies are AIs*, *Phantom Ganon is actually a character not just a puppet*, *trans OC*, *F!M OC*, *Human Experimentation*, *Implied Cannibalism*, *essential moral: corporations are Bad*, that’s actually not it but whatever, *Asexual Link*, *Androids*, *Clones*, *Clones who are also androids*, *The Goddesses aren’t actually divine but they do love to play god*.

This tagset features two cases where longer conversational tags moderate the claims made in more declarative tags. The first tag, “I have no idea what I’m talking about,” follows on the “Pseudoscience” and “Technobabble by a Tech Dummy” tags to highlight the author’s lack of expertise on the concepts included in the cyberpunk science fiction setting for this fan work. The second tag, “that’s actually not it but whatever,” comments directly on the preceding tag declaring the moral of the fan work. The challenge with these kinds of relational tags is in understanding their utility in the metadata system of Archive of Our Own. Conventional information science approaches would dismiss these tags as meaningless, marginalia at best, but the fact that authors use them means they are worth investigating as relevant parts of the metadata system. These relational tags specifically emphasize the gestalt nature of the tagset and emphasize the communicative work done by all tags in the system.

Feinberg (2011) identifies three key qualities of personal expressive bibliographies that set them apart from other collecting practices: personal expressive bibliographies feature eclecticism, voice, and emotional intimacy. The tagsets in this research are not exactly like the personal expressive bibliographies examined by Feinberg, as they are explicitly written to fit into a public-facing retrieval-oriented system. They do, however, share some of these qualities, especially in the expressive category of tags. The authors are encouraged but not required to include tags in a variety of categories, recommended autocomplete suggestions for tags but not limited to the ones in the system, and given the space to include tags with emotional valence. Even the tags categorized as declarative are part of the system, and have a distinct voice. The concept of textual voice is key to Trace and Dillon’s (2012) reading of the archival finding aid, a kind of archival metadata, as a document genre to encourage

archivists to bring user research into their work. In the fan fiction repository, we clearly see a case where tags are expected to have a voice *and* to function with an audience, illustrating how embracing the subjectivity of information organization does not reduce its organizational power.

Themes

Each of the research questions enables identifying specific strategies that fan authors use in their tagging practices, such as fan cultural conventions for indicating modifications to a character like “antagonist!Zelda.” From the survey of tagging practices and kinds of tags, several overarching themes emerge. First, context is important and can alter the meaning of a tag. At the simplest, unique combinations of original elements reveal narrative possibilities. Moreover, tags like “antagonist!Zelda” or “that’s actually not it but whatever” that reflect or express actually modify the meanings of surrounding tags. A reader who expected a work with “Zelda (Legend of Zelda)” to feature Zelda as a heroine would be disappointed by a work tagged with “antagonist!Zelda.” Tags do not create meaning in isolation, and isolating individual tags actually presents a considerable challenge to understanding what tags mean (Jørgensen *et al.*, 2014; Windleharth *et al.*, 2016). Jørgensen *et al.* (2014) emphasize the context-specificity of tags as a complication to canonical search, indexing, and query tasks. In contrast to other research on folksonomies or user-generated tags, this project moves between tags and their tagsets to understand the function of author-supplied metadata. The surrounding tags visible in a complete tagset in Archive of Our Own add references to imbue value, and must be considered when interpreting tags.

Second, tags are not just what they say, but how they say it. The author’s voice is a critical component of the tagsets, and is privileged by the metadata system with its room for free text entry. Unlike other tag classifications, the method used in this research focuses on both content and expression, close reading tags rather than simply identifying what a tag is about. The development of the expressive tag category that challenges conventional understandings of tag function is a direct result of attention to voice. Finally, the narratological differences are less impactful than structural forces like metadata system design or fan cultural conventions. Marlow *et al.*’s work on social tagging argues for respecting the tagging system’s structure as a key force in shaping tags, and this research supports that claim. Despite profound differences in openness of plot and character identity in each of the three original works, the kinds of tags seen in each fandom were similar.

Conclusion

The specific practices discussed above and seen across the three fandoms in this exploratory study extend our current understandings of metadata functions. By attending to tag use in context, we were able to identify practices and kinds of tags used, and create a preliminary typology. The typology, in turn, allowed for identifying exemplars to close read.

While the research in this paper supports studies that emphasize the high variability in user-generated tagging systems (Marlow *et al.*, 2006; Marshall, 2009), it also suggests that there are specific functions and strategies that seem to be shared across many users uploading metadata to Archive of Our Own. Two major kinds of tags in the fan fiction repository are identified by how they are presented: tags that declare the inclusion of an element in the fan fiction work, concordant with existing ideas of what metadata should look like, and tags that are more expressive that present a challenge to existing ideas of metadata. The declarative tags are divided further by what they describe, using the narratological distinction between story and discourse to interrogate the metadata representation of the fan author’s relationship to the original works. For example, authors use declarative tags to indicate story elements from the original works, and similarly use

declarative tags to note how closely the fan work adheres to an understanding of “canon.” Also, fan authors modify tags in a specific, structured way to show how their fan work remixes elements from the original work, such as in a tag like “antagonist!Zelda.” These strategies allow authors to draw the nuances of fan creativity out of simple declarative tags that on first glance appear only to list the contents of a work.

Still, the declarative tags fit easily into a conventional metadata system. In contrast, Archive of Our Own features a unique category of tags, termed “expressive” to highlight their informal, creative, personal nature. The expressive category particularly challenges the severe distinction between controlled, consensus metadata and personal, incoherent freeform tags. In this category are tags that seem less useful for retrieval or preservation such as “hang onto your butts team” or “I have no idea what I’m talking about.” Instead of throwing these tags out as useless, we can read the expressive tags as crucial pieces of the metadata ecosystem that serve to bring fan readers into a conversation about the works. What would a system like Delicious, or even a public library’s personal bookshelf feature, look like if we considered the communicative and social possibilities of tags? The communicative function of the expressive tags in this repository offers an alternative view of what metadata can do. More importantly, the expressive and declarative tags work together, each with their own roles in the metadata ecosystem, illustrating how tags become meaningful in context.

Notes

1. https://archiveofourown.org/wrangling_guidelines/2
2. Tagset from *a knife in the back is worth two in the heart* (<http://archiveofourown.org/works/7195706>).
3. Tagset from *Reversal* (<http://archiveofourown.org/works/9316964>).
4. Tagset from *Trine* (<http://archiveofourown.org/works/6939292>).
5. A representative of Archive of Our Own responding to a call to clean the tagging system defines “Tumblr-style tags” in the following blog post as a specific kind of “one-off commentary tags”: <http://ao3org.tumblr.com/post/58351045314/tumblr-tagging-and-why-its-a-problem-on>

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Appendix. Full typology

I. *Story element*

A. **Character** (identity):

1. Static Mimetic Elements (category adapted from Vella 2014)

a) Represented elements

- (1) Name
- (2) Physical appearance
- (3) Costume(s)
- (4) Voice
- (5) Animations

b) Contextual elements

- (1) Role

c) Mechanical (ludic) elements

- (1) Capabilities and Limitations
- (2) Passivities
- (3) Goals

B. **Object**

C. **Concept**

- D. Event(s)**
 - 1. Generic
 - 2. Game-specific
 - E. Location**
 - 1. Generic
 - 2. Game-specific
 - F. Environment**
 - G. Interpersonal relationships**
 - 1. Sexuality
 - a) Kink
 - 2. Friendship
 - H. Actions**
 - I. Neuroatypicality**
 - J. Emotions**
 - II. Discourse element**
 - A. Tone**
 - B. Focalization**
 - C. Warnings**
 - D. Genre**
 - 1. Non-fandom-specific
 - 2. Fandom-specific
 - E. Canonicity**
 - F. Reference to other media texts**
 - G. Reference to fandom-specific events**
 - H. Ship name**
 - III. Expressive note**
 - A. Note about the **writing process**
 - B. Note about the **author's life**
 - C. Note about the **story/discourse**
 - D. Note **directly addressing reader**
- R = "repeat tag"**
C = continued tag
N = negation tag

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