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The Dragonslayer: Folktale Classification, Memetics, and Cataloguing

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Tillett's Shared Characteristics

In this paper I will be attempting to describe a 'memetic' perspective that may serve as the basis for the unification of a great variety of knowledge organization systems. However, before that point it would be beneficial to provide some grounding in conventional knowledge organization concepts.

The field of knowledge organization, and cataloguing in particular, has increasingly become concerned with bibliographic relationships (IFLA 1998, Noruzi 2012, Smiraglia 2002, Tillett 2001). Arsenault and Noruzi (2012) define a bibliographic relationship as "the association, relation, connection, and interaction between different bibliographic entities, or components of entities."

Tillett (2001) developed a taxonomy of bibliographic relationships that is largely shared by the current cataloguing models, such as Functional Requirements for Bibliographic Records (FRBR) and the Library Reference Model (LRM), as well as the current cataloguing rules Resource Description and Access (RDA). Tillet's taxonomy includes: Equivalence relationships, Derivative relationships, Descriptive relationships, Whole-part relationships, Accompanying relationships, Sequential relationships, and Shared characteristic relationships. It is this last relationship, 'shared characteristic relationships,' that will be my focus.

A 'shared characteristic' holds between an entity and otherwise unrelated entities sharing some properties or characteristics (Tillett 1991). In cataloguing these might be elements such as creator responsibility and subject heading access points, or "shared language, date of publication, or country of publication" (Tillett, 2001). There are more "shared characteristics" that could be of use.

For example, RDA has reserved space for future rules related to bibliographic information beyond what is strictly needed to catalogue most texts. These are RDA rules [12-15: Guidelines on Recording Attributes of Concepts, Objects, Events, and Places](#) and [33-37: Guidelines on Recording Relationships between Concepts, Objects, Events, and Places](#). These sorts of bibliographic information would fit well within the mould of 'shared characteristics.' However, it is notable that each of these currently states: "To be developed after the initial release of RDA" and are dated to June 22, 2010.

This means that for ten years the RDA developers have seen the value of

these more detailed 'shared characteristic relationships' but have still not made any guidelines regarding them available. This is quite understandable, as the task is daunting. Systematically organizing every concept, object, event, and place could be viewed as tantamount to attempting to organize the entire universe of knowledge. Additionally, with the coming adoption of linked data knowledge organization systems like BIBFRAME, the moment for enhanced 'shared characteristic relationships' may still lie in the future.

However, I believe that a great deal of work has already been done on 'shared characteristics' that may not be fully recognized. I suggest that 'memes' are similar to Barbra Tillett's "shared characteristic" bibliographic relationships (Tillett, 2001) and can serve the same purpose.

MEMETICS

Memes are the units of cultural inheritance. The idea of the meme was based on an analogy borrowed from biology, genes being the unit of biological inheritance.

> In 1976, Richard Dawkins, the English evolutionary biologist, proposed an idea in his book, The Selfish Gene: What if ideas were like organisms, where they could breed and mutate? These ideas, he claimed, are actually the basis for human culture, and they are born in the brain. (Scarbrough, 2017)

Just as genes can be incredibly diverse in function and manifestation, memes can be similarly varied: simple phrases passed from parent to child, such as "an apple a day keeps the doctor away", traditions, rituals, and best practices. In principle all of an organism's genes could be discovered and their role in constituting the whole understood, however in practice this is beyond the scope of human knowability. Similarly, memes are often difficult to even characterize and are much more subject to interpretation than genes. But the concept is still potentially useful.

A common subtype of the meme is that of the trope, a term common in the field of literary studies. A trope is

> "a figure of speech, especially one that uses words in senses beyond their literal meanings. [...] The most generally agreed distinction in modern theory is that tropes change the meanings of words, by a 'turn' of sense, whereas schemes merely rearrange their normal order. The major figures that are agreed upon as being tropes are metaphor, simile, metonymy, synecdoche, irony, personification, and hyperbole" (Baldick, 2001).

Tropes are commonly recurring rhetorical devices, character archetypes, genre conceits, motifs, or clichés in literary and creative works. There have been innumerable efforts to collect and organize storytelling patterns such as tropes. Two of the more notable efforts are Christopher Booker's Seven Basic Plots (Overcoming the Monster, Rags to Riches, The Quest, Voyage and Return, Comedy, Tragedy, and Rebirth) and Joseph Campbell's monomyth, also called the Hero's journey.

There have also been more granular efforts to catalogue each component of one domain or another. For example, Vladimir Propp's Morphology of the Folktale lists 31 basic structural elements (or 'functions') that typically occurred within Russian fairy tales. Another example is the Fantasy classification system by Alastair Cameron, which was something like the Dewey Decimal System, with a hierarchy of science fiction and fantasy concepts. Each of these granular components is a 'meme' of one type or another.

There have been many attempts to organize stories by memes. The Aarne–Thompson–Uther (ATU) Index is a catalogue of folktale types used in folklore studies, which describes and organizes hundreds of folktale types. It seems well suited as a source of memetic 'shared characteristics.'

Aarne–Thompson–Uther (ATU) Index

Returning to the story meme of 'The Dragonslayer,' there is one classification system that stands out: The Aarne–Thompson–Uther Index (ATU Index). The ATU of folk tale types is a classification scheme that organizes folk tales from around the world based on shared story patterns, or 'motifs' (Uther, 2004). In the ATU scheme, stories with the ATU #300, also called 'The Dragonslayer' motif, involve

the classic depiction of a man rescuing a beautiful maiden from a dragon (Uther, 2004).

On the basis of the ATU system a number of impressive projects have been undertaken. An analysis of ATU folktales has revealed the folk-zoological knowledge of ancient cultures (Nakawake, 2019). Another set of projects used techniques developed in genetics to map various ATU folktales to geographic locations in order to reconstruct their origins (Graça da Silva, 2016)(Bortolini, 2017). One notable project is called the Fairytale Explorer:

> This project (Fairytale Explorer) visualizes the Multilingual Folk Tale Database from http://www.mftd.org/ as part of the course Making Maps I: Introduction to Spatial Analysis, Data Visualization and Map Design at SUTD. (Truesanju, 2018)

From this project I was able to download a variety of ATU metadata, including a selection of 'The Dragonslayer' stories. With this metadata in hand, the natural next question became: are there any other systems that recognize 'The Dragonslayer' as a recurring pattern? And, would these systems be compatible?

TVTROPES

Another set of memes collected in another knowledge organization effort are the tropes of TvTropes. TvTropes is an online catalogue of recurring patterns called tropes that include plot structure, character archetypes, and genre conceits. TvTropes has a somewhat broader concept of the trope compared to Baldick. The website tvtropes.org defines a trope as:

> "a storytelling shorthand for a concept that the audience will recognize and understand instantly. [Recently], "trope" has the even more general meaning of a pattern in storytelling, not only within the media works themselves, but also in related aspects such as the behind-the-scenes aspects of creation, the technical features of a medium, and the fan experience. The idea being that storytelling is not just writing, it is the

whole process of creating and telling/showing a story." (tvtropes.org, Trope)

TvTropes is currently one of the most exhaustive catalogue of tropes, and as a result, it is also one of the most exhaustive catalogue of memes generally, as well as 'shared characteristics.' This extensive collection of memetic content is the work of numerous enthusiasts, which raises the question of standardization and authority control. Additionally, incorporating the efforts of non-professionals into authoritative cataloguing systems is likely to have its own set of substantial challenges. However, these concerns are beyond the scope of this paper.

TvTropes has its own version of 'The Dragonslayer' who is more of a character archetype then the embodiment of an act, as featured in the ATU system (TvTropes, 2020). 'The Dragonslayer' trope entry on tvtropes.org lists a number of classic tales and works of literature, such as [Tristan and Iseult](#) and [Saint George and the Dragon](#), to the confrontation with the dragon [Smaug](#) in [The Hobbit](#).

In the same vein as the ATU Fairytale Explorer from the previous section, I harvested the metadata for the works suggested by TvTropes as containing the 'The Dragonslayer' trope.

BRIDGE: THE DRAGONSLAYER

The meme of 'The Dragonslayer' was selected as the focus for this paper for two reasons: first, it fit the theme of the conference, and second, and more importantly, multiple 'shared characteristics' knowledge organization systems featured such an element. For this paper I combined the various patterns, motifs, tropes, and memes of 'The Dragonslayer' available in ATU and TvTropes schemes in a linked data system. There have been productive efforts in porting existing narrative classification schemes to a linked data framework (Declerck, 2017).

I encoded the metadata I collected in a Semantic MediaWiki server and generated a combined RDF file ([The Dragon-Slayer](#)). By combining multiple schemes using the concept of genetic, or memetic, inheritance and relationships, I hoped to reveal hitherto unrevealed connections between classic folktales and more recent media. For example, the old Norse tale of [Fáfnismál](#) was likely the inspiration for the confrontation with Smaug in The Hobbit. While Fáfnismál did

not appear in the metadata collected from the Fairytale Explorer, it does seem a decent candidate for inclusion in the ATU classification under ATU #300, 'The Dragonslayer.'

Additionally, since I used the MediaWiki platform to create the combined dataset, it is fairly easy to add ATU metadata to a work like Fáfnismál. For the purpose of this paper, the original datasets were not modified or altered in any way.

After combining the metadata and visualizing the entire dataset, the initial results were perhaps, less than encouraging (See Figure 1, Appendix). However, after removing most of the superfluous information, the resulting visualization clearly shows each of the works and their relationships to shared concepts (See Figure 2, Appendix). While this is still not a representation of Tillet's 'shared characteristic relationships,' it should only be a step removed.

DISCUSSION

While RDA intends to offer some support through the relationship designators much work is still left to be done. As a matter of practicality, the decision to not focus on 'Shared Characteristics Relationships' in current knowledge organization systems makes a great deal of sense. Each of the formal memetic classisfications, discussed in this paper, like the ATU Index, only cover a small portion of the bibliographic universe.

In contrast, TvTropes attempts to cover a much broader domain, but it can only do so by relying on a vast number of volunteers and enthusiasts. These trope and meme relationships can vary widely in authority and utility; some might represent a firm scholarly consensus (we can be fairly sure that The Hobbit draws deliberately on Fáfnismál), while others might be suspect. Incorporating shared characteristics at this level of specificity would inevitably require significant changes in the ways catalogues are designed and maintained.

Perhaps what is needed is a model to organize all the possible additions that could find their way into the catalogue. The biological analogy suggests another type of bibliographic collocation: Lines of descent based on 'shared characteristics.' This may form the basis of a memetic cataloguing model.

Returning to the RDA rules, sections 12-15 and 33-37 were set aside because of a perceived value of 'shared characteristics.' These rules were likely not populated because of the enormity of the task. The memetic perspective suggests that the rules for these RDA sections could be of a very different kind from the rest of RDA. The project before us could well start by importing shared characteristics from established systems, like the ATU Index and TvTropes. From there, the task will likely evolve into a long-term data-curation project. The various data elements from the disparate sources will need to be linked together, some may even logically imply others. Family trees of texts and memes are waiting to be created and their branches filled. Creating an entire web of cultural connection at the highly granular level of the meme is an ambitious task, but it may well be a Dragon that, we as a community, can slay.

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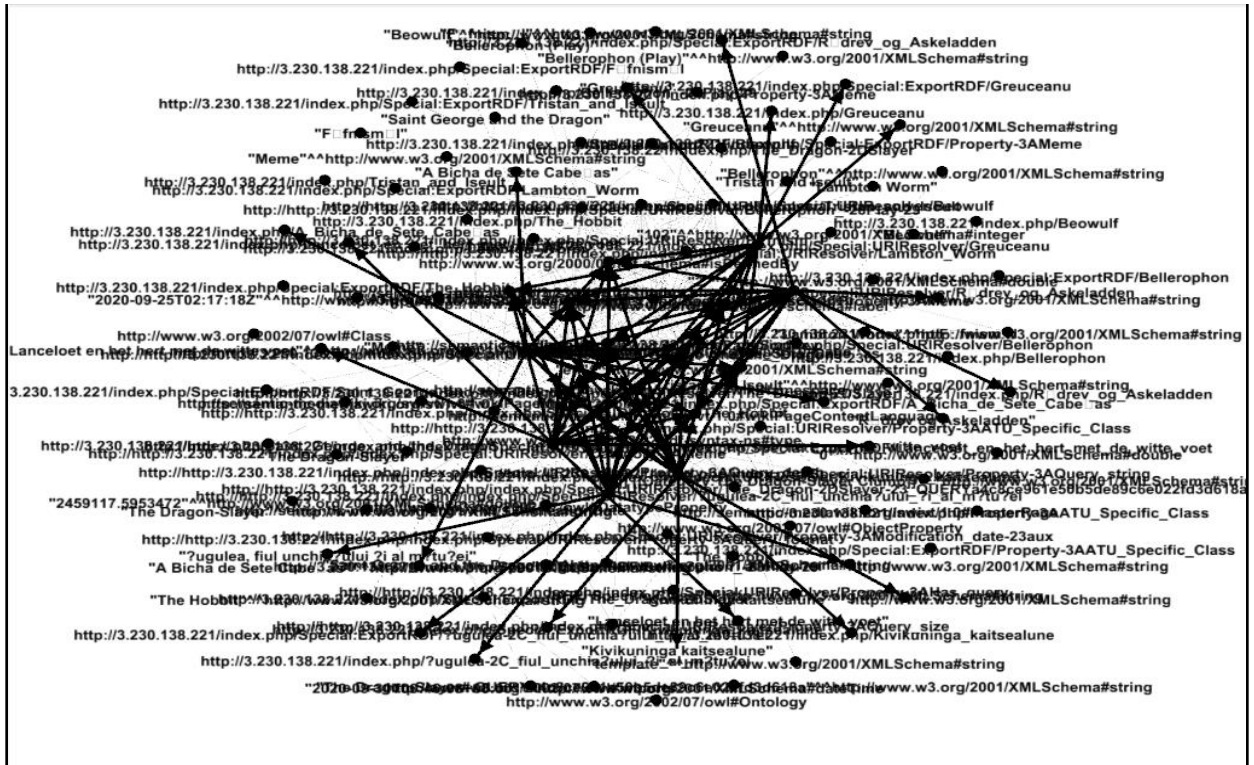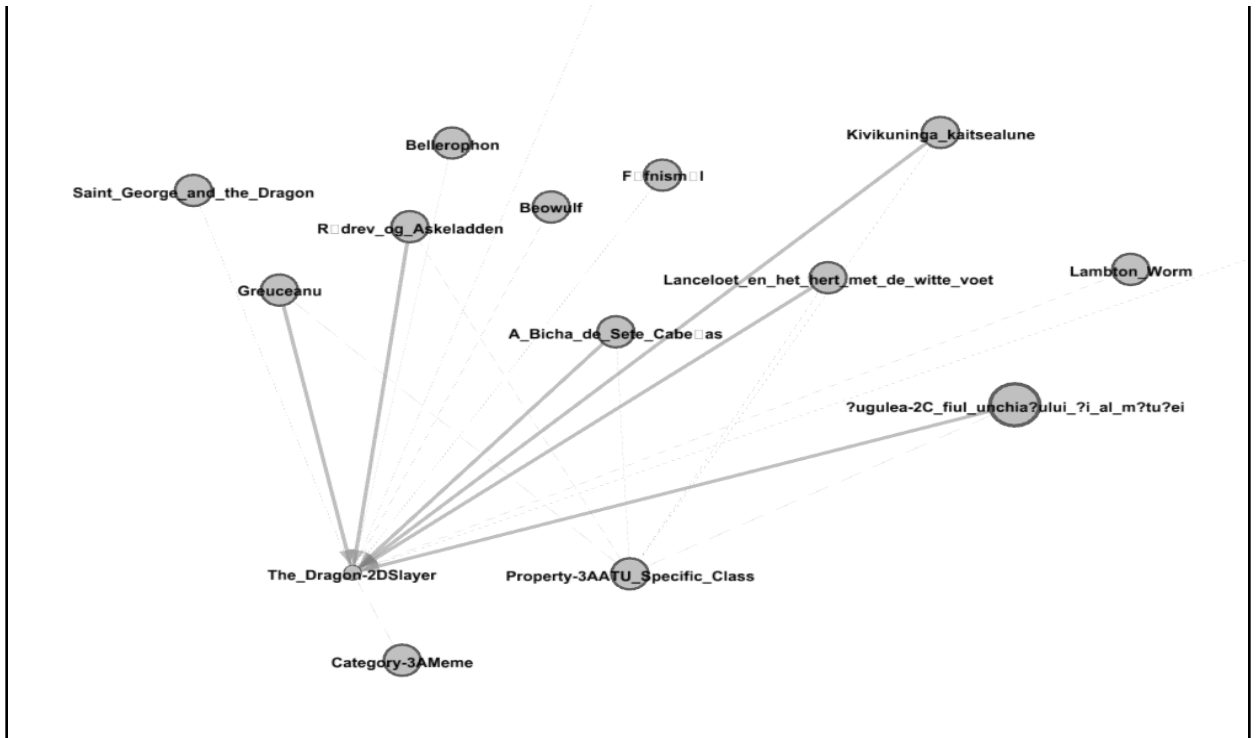
Appendix

Figure 1. Initial results… are not promising

Figure 2. Getting Somewhere