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Implementation of FAST in Two Digital Repositories: Breaking Silos, Unifying Subject Practices

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Implementation of FAST in Two Digital Repositories: Breaking Silos, Unifying Subject Practices

Abstract

This study traces evolving approaches to the use of the FAST (Faceted Application of Subject Terminology) in digital repositories at Atkins Library at the University of North Carolina at Charlotte, where changes in staffing, the launch of an institutional repository, and efforts to address problematic language in metadata have necessitated a shift from an in-depth indexing approach to FAST to a lightweight "tagging" model more suited to present-day metadata needs. Despite its apparent simplicity, Atkins' experience with FAST has shown that it still requires significant time, effort, and experimentation in order to deploy it to best effect.

Keywords: classification and subject analysis and access; FAST subject headings; management of cataloging and related functions; cataloging for digital resources; reparative cataloging; diversity, equity, inclusion, and accessibility in libraries

Introduction

In 2014, J. Murrey Atkins Library at the University of North Carolina at Charlotte implemented the FAST (Faceted Application of Subject Terminology) vocabulary in its new Goldmine repository, ceasing to use LCSH (Library of Congress Subject Headings) to describe cultural heritage objects as it had in the past. Among the factors that prompted the transition to FAST at Atkins were the vocabulary's greater appropriateness for a repository platform in which facets are a primary mechanism for discovery and the vocabulary's relative simplicity, which

made it far easier for staff and student workers to master than LCSH. At the time of its adoption at Atkins, FAST seemed in fact so easy to deploy that staff were lulled into the belief that the new vocabulary would effortlessly accelerate and streamline workflows that LCSH had rendered cumbersome and slow. However, while FAST has delivered real benefits for Atkins in terms of speed and efficiency, the library's subsequent experience with the vocabulary in both Goldmine and Niner Commons, an institutional repository built several years later on the same Islandora platform, has demonstrated that transitioning to a faceted vocabulary can be a complex, evolving process that requires time, effort, and experimentation.

This article will describe Atkins Library's complicated experience with FAST since adopting the vocabulary eight years ago, tracing it from early efforts to describe repository materials with the new subject schema to more recent projects that seek to harmonize divergent FAST practices in Goldmine and Niner Commons. Focusing closely on recent efforts at Atkins to move away from a LCSH-influenced practice of deep subject indexing and highlighting an ongoing DEIA (diversity, equity, inclusion, and accessibility) metadata remediation project involving problematic FAST terms, this article will suggest that using FAST requires a carefully calibrated, thoughtful approach that balances speed with an attentiveness to the ways in which faceted subject terms can facilitate or impede the discovery experience of an increasingly diverse group of users. Rather than a plug-and-play product that magically frees up metadata logjams, FAST has proved to be a deceptively simple vocabulary that Atkins is still learning to deploy to best effect.

Literature review

While LCSH remains the dominant schema for subject description, FAST offers a lightweight alternative that speaks to the changing nature of resources and discovery. Developed collaboratively by OCLC Research and the Library of Congress as far back as 1998, the schema was created to address emerging issues within the library and information science community—namely, the rapid growth of digital information and assets.[1] Libraries today are often faced with both increased digital assets to describe as well as restrictive budgets and understaffing. FAST offers a path forward, as it broadly aims to retain the robust vocabulary of LCSH while streamlining and simplifying the schema itself, making it easier for staff to apply and users to navigate.[2]

Perhaps unsurprisingly, literature on the experience of institutions that have used FAST has tended thus far to focus primarily on the factors that led to the adoption of the new vocabulary and on initial steps taken to implement it rather than on specific techniques and strategies of applying FAST terms in day-to-day metadata creation and maintenance in the post-implementation environment.[3] FAST is, after all, a subject schema of recent vintage that has not been universally accepted by the cataloging and archives community, with some concerned about the loss of context and the less targeted search results that come with a post-coordinated vocabulary.[4] At this stage of the vocabulary's development, literature centered on the implementation experience of recent adopters is probably more pertinent to the needs of library and archives professionals who are exploring FAST as a possible vocabulary for use in their repositories and catalogs. Nonetheless, the lack of more general case studies on FAST or dilemmas involved in using the vocabulary over time is striking, given that FAST had already been adopted (at least on a trial basis), according to a OCLC case study,[5] by a range of archives, libraries, and information agencies as early as 2013. This trend has only increased, with more

institutions considering a complete transition to FAST rather than using it for select collections or integrating it alongside other vocabularies.[6] It might have been expected that organizations who have used FAST fruitfully would have weighed in on their experience with applying the new subject schema over the long term, not just in the immediate implementation period.

One significant factor that might help explain the relative paucity of such studies thus far is FAST's perceived simplicity itself, frequently cited as one of the vocabulary's most defining characteristics. The widely disseminated notion that FAST is a simple, out-of-the-box vocabulary product that can be implemented by trained catalogers and nonprofessionals alike with minimal effort may have helped create a perception that FAST requires little explication in the form of case studies and extensive guidelines to be used effectively. Yet the existing literature offers some evidence that using FAST, simpler than LCSH though it surely is, is beset with some of the same complexities and problems that metadata staff working with pre-coordinated vocabularies face—the kind of problems that case studies can elucidate and help resolve. In their study of the British Library's FAST implementation, Ashton and Kent note, for example, that catalogers taking part in the Library's pilot project erred "towards over-indexing" materials when applying FAST terms, a tendency similar to the kind of overapplication of LCSH terms to which traditional catalogers have been prone in the past.[7] In *FAST: Faceted Application of Subject Terminology*, one of the few practical resources available on using FAST, Chan and O'Neill caution that "inconsistency can creep into a file because some works may have been indexed or cataloged under different guidelines or assumptions about the appropriate depth of subject indexing or cataloging," a problem that can apparently arise in FAST databases as easily as it can in those in which LCSH is used.[8] Several respondents to OCLC's 2013 FAST case

study cited the need for "implementation tips and documentation" despite the vocabulary's purported simplicity.[9]

That FAST is a simpler vocabulary than LCSH seems beyond dispute. Yet as these studies suggest, FAST's greater simplicity does not mean that applying it successfully is completely without its difficulties. During its eight years of using FAST in its repositories, Atkins Library has experienced and in some cases overcome a number of dilemmas involving over-indexing, inconsistency of usage in different collections, different understandings among staff of what is an adequate number of FAST headings, struggles to simplify and automate the application of FAST terms, divergent FAST training techniques for different staff members, and the need to remediate FAST terms that are problematic from a DEIA perspective. It is this complex experience of learning to use FAST optimally in multiple collections and repositories, not just during the initial implementation and its immediate aftermath but over an extended period, that has been illuminated only fitfully in the existing literature and that this article seeks to describe.

History of FAST at Atkins: Goldmine digital collections repository

Atkins Library Special Collections and University Archives (SCUA) decided to transition from LCSH to the FAST vocabulary in the description of its digital assets in 2014, during a period of significant change within the unit that saw the launch of a new repository built on the open-source Islandora platform, the shuttering of a legacy CONTENTdm repository, and a pivot to a mass digitization strategy. Whereas SCUA's CONTENTdm repository had been a showcase for small representative samples of larger manuscript collections described with Dublin Core, the Islandora repository, which uses MODS as its primary metadata schema, would house far more

substantial collections of digitized manuscript groups, oral histories, and photographs, many described at the item level. Descriptive metadata for CONTENTdm collections had largely been derived from legacy metadata in SCUA's Archivist's Toolkit instance, which included LCSH strings with some errors in subheading usage. In the new Islandora environment, the metadata workload would be much greater; the staff and student workers to perform it few, and mostly untrained in LCSH; and the opportunities for the kind of quality control necessary to correct errors in LCSH strings limited. FAST was identified as a cataloging efficiency that would help SCUA shoulder the new descriptive burdens it had taken on and accelerate metadata creation in its new repository.

A significant challenge that SCUA encountered in making the transition to FAST was the lack of widely available documentation, best practices, and guidelines on applying FAST headings that might help the unit adapt to the new schema. At the time of the migration to Islandora and the implementation of FAST, one of the few such resource was Lois Mai Chan and Edward T. O'Neill's *FAST: Faceted Application of Subject Terminology: Applications and Principles*, which counsels an approach similar to the LCSH Subject Headings Manual, recommending, for instance, that FAST headings should be applied for subjects making up 20% or more of the content of the described item and that two headings should be assigned when no heading "covering a concept precisely" exists.[10] In the absence of documentation recommending other approaches, it seemed reasonable to apply FAST in a way that replicated earlier practices of LCSH assignment at Atkins both in its catalog and in the CONTENTdm repository. FAST is a vocabulary derived from LCSH, after all. However, in falling back on old LCSH habits of description, SCUA staff had not fully reckoned with the extent to which the faceted, post-

coordinated nature of FAST makes it a significantly different vocabulary from LCSH, and requires different application strategies to be used effectively.

One of these legacy LCSH habits in SCUA was in-depth indexing of repository materials, a tendency also observed at the British Library in its implementation of FAST, where catalogers erred toward "over-indexing," at least in their early application of the new subject schema.[11] Aiming to "to enumerate [a work's] significant concepts or aspects or to represent individual components of the work," in-depth indexing has been identified by Mai Chan and O'Neill as one of two primary approaches to applying FAST and other subject vocabularies, the other being "summarization," which seeks to identify only the primary subjects.[12] In some collections, and with some types of materials, in-depth indexing may be a reasonable descriptive approach. Yet when practiced with a post-coordinated vocabulary like FAST, it tends to result in an increase in number of terms applied to each repository record even beyond that which would be expected when using a faceted schema, and a loss of specificity and context in subject description. In LCSH, a long tradition of cataloging rules and standards such as the rule of three and the 20% rule serves as a check on recording excessive detail in in-depth indexing, and the distilled syntax of pre-coordinated LCSH strings mean that subject terms occupy far less subject "real estate" in metadata and cataloging records cataloged at this level. Lacking these syntactical and rule-based constraints, FAST tends to produce, as was noted in a study of FAST headings by the Subject Analysis Committee Subcommittee on FAST, more generic subject terms in which context is often lost.[13] In-depth indexing increases this tendency, which Atkins had already observed during preliminary experiments with converting LCSH headings in legacy repository records to FAST with the FAST Converter.

A repository record for the Kelly Alexander Jr. oral history interview[14] exemplifies this approach and its consequences. Including FAST terms for topical and genre headings, access points for persons and corporate bodies, interviewee occupation terms, and geographical terms, the record has more than twenty headings assigned that closely track topics listed in the abstract. Extremely broad, vague headings like "Political leadership" and "Race relations" sit side by side with more specific terms such as "Busing for school integration." Topical terms for interviewee vocations further expand the number of headings assigned. The level of subject detail in which in-depth indexing results could be helpful to users, but in a repository like Goldmine in which facets are a primary mechanism for discovery, such in-depth practices can have the effect of misrepresenting instead of elucidating the subject content of repository materials, which may deal only glancingly with many of the subject terms assigned. This additional noise can hinder rather than facilitate discovery. A more efficient FAST approach following the summarization model might have involved letting keywords in the abstract serve as the primary means of subject access to the interview and assigning only three to four broad FAST topical headings.

[Table 1]

A countervailing approach to FAST usage in SCUA, strongly influenced by MPLP archival description practices within the unit (more product, less process) and by mass digitization projects that require a different intensity of description, is summarization. In one digitization project involving nearly 20,000 photographs, for instance, a smaller group of FAST subject terms and unique resource identifiers (URIs) was preselected by staff and then applied to the image metadata in dropdown menus in spreadsheets.[15] In projects focusing on the mass digitization of manuscript collections, SCUA staff have applied a small number of collection-level FAST subject terms at the most general level to MODS records representing components at

all levels of the manuscript hierarchy, forgoing item-level subject analysis. However, FAST minimalism is not necessarily a more successful or scientific strategy for using the vocabulary than in-depth indexing. Such an approach could negatively impact discovery in a different way, by leaving important subject content undescribed.

What has tended to determine whether a summarization or an in-depth indexing approach is used in a particular Goldmine collection is the staff member who is managing the project. In SCUA, where a decentralized model of metadata creation is followed, the number and type of FAST terms assigned to objects vary depending on whether the project manager is an archivist approaching description from an MPLP standpoint, an oral historian who has conducted many of the oral history interviews herself, or a former cataloger whose views on subject assignment are influenced by training in LCSH. A related factor influencing subject description is the nature of the contents of the collection being described, and whether its components can be described comfortably at the item level. Oral histories, for instance, are cataloged individually using an in-depth indexing approach; photographs and manuscript collections are given a more cursory description with FAST terms. Neither approach, however, has been applied with absolute consistency. Records in collections that employ in-depth indexing can show evidence of summarization, while significant subject detail can appear in records in collections in which an approach more akin to summarization has been used.[16] In some collections, no consistent approach can be discerned.

Internal FAST documentation has helped regularize FAST application across collections to some extent. Such documentation has proved even more necessary due to the paucity of widely shared FAST best practices and guidelines in the broader cataloging and metadata community. At the same time, local guidelines developed for different collections have tended to

reinforce the dynamic whereby FAST is applied differently across the repository. A general document on applying the MODS schema in the repository recommends using at least two FAST subject terms to each record, for instance, but a separate guidelines document for oral histories prescribes a limit of ten headings. FAST training techniques, too, have been collection and domain specific, with staff working on separate projects receiving different pointers about how many FAST headings to apply to metadata records, and what kind. Such variations in training techniques and documentation lead to increased inconsistency in how FAST terms are applied to records across the repository, and thus to inconsistencies in the ways that different collections can be retrieved by users with faceted subject terms.

Additional factors that have complicated the implementation of FAST in Goldmine include the lack of FAST equivalents for many access points for entities such as persons, corporate bodies, and geographical places in the Library of Congress Name Authority File (LCNAF). Because FAST headings for names of persons and families are created only for names that have appeared at least once in a subject field in a WorldCat bibliographic record, many name headings needed for subject and creator/contributor access points in SCUA metadata lack FAST coverage. After an initial period of mixing LCNAF access points and FAST headings for entities in subject elements, SCUA made a decision to rely on the LCNAF for all personal and corporate subject access points and associated URIs in all subsequent metadata. The lack of FAST terms for many place names has necessitated a different approach: creating local FAST versions of terms for neighborhoods, small towns, and geographical features that conform in syntax and structure with other FAST geographical terms used in the repository. FAST's exclusive reliance on LCSH and OCLC Connexion as the source of its terminology appears to close off other routes for new term proposal and creation. The ability to create FAST terms

independently of LCNAF as well as of LCSH, suggested by Yoshimura-Smith[17] and Riemer,[18] might help fill in entity and subject lacunae currently existing in the FAST vocabulary.

SCUA's experience with FAST thus far has indicated that the transition to a simpler, post-coordinated schema does not necessarily result in the greater cataloging efficiencies and simpler subject description sought. In-depth indexing with FAST can take just as long as assigning LCSH, a phenomenon also noted in time and motion studies at the British Library.[19] For this reason, the recent trend in Goldmine—particularly after the launch of Niner Commons—has been towards a more minimalistic approach to FAST heading assignment, and the use of automated approaches where possible. Yet the highly diverse nature of the Goldmine's collections and their differing metadata needs conspire against the more standardized approach that can be achieved in a much smaller repository with more uniform content and subject matter, like Niner Commons. In some collections, different intensities of subject description are warranted. Nonetheless, a greater uniformity of FAST assignment practices and a more minimal approach are needed across the repository. Recent collaboration with Niner Commons staff on several metadata remediation projects has produced fruitful ideas about how greater FAST uniformity can be achieved in Goldmine and how FAST practices in the two repositories might be better harmonized.

New Niner Commons institutional repository

In 2019, Atkins Library launched Niner Commons, the institutional repository for the university. The new service was developed in order to support UNC Charlotte as a growing research university, providing a mechanism for faculty to share open access versions of their scholarship while creating reliable and long-term access to scholarly work created on campus.[20]

The library was especially equipped to develop this service as it already had digital repository expertise through Goldmine. Utilizing and developing extensions within the same repository platform, Atkins added institutional repository functions to establish Niner Commons.

In addition to drawing from the technical expertise of running a digital repository, in developing Niner Commons Atkins Library drew on the metadata practices of Goldmine—namely, employing FAST for subject description and MODS for the metadata records. However, the more uniform content types in Niner Commons meant that the repository did not face the same challenges with over-indexing that Goldmine encountered with FAST. Niner Commons largely features research articles, which are often targeted in subject matter and extent as they answer specific research questions. Accordingly, staff determined that they generally could apply two or three terms per work. Conversely, the cultural heritage materials featured in Goldmine often relate to specific people, places, and events while also engaging with broader cultural phenomena and conversations—thereby often necessitating more extensive subject description while creating an environment prone to over-indexing.

In addition to differences in content matter, Niner Commons and Goldmine also differ in terms of discovery and the user experience. Usage data on PDF download counts and website visits show that the majority of users interacting with content from Niner Commons do so via downloads on Google Scholar—not from visiting the Niner Commons site itself. This might change as Niner Commons grows and there are enough works within it to serve as a meaningful starting point for research, in the way that especially robust and established institutional repositories are, but currently the works within the repository are most often recalled via Google Scholar searches. This means that most users do not interact with the site's subject facets generated by the records' FAST subject headings, or utilize it for further discovery within the

repository. This differs from Goldmine, wherein many users discover and interact with content from Goldmine by visiting the site itself, and can discover like or related collections through the subject browse. Given these differences in content focus and discovery methods, staff determined that items in Niner Commons would require less exhaustive subject description than those in Goldmine. Staff did still feel it necessary that there were some subject discovery access points, as opposed to relying wholly on keyword searches of indexed abstract content, for example, to both enable browse and further facilitate keyword searching. In fact, a 2017 study on discovery methods for institutional repository items found that 34% of searches from an external search engine that led to an institutional repository item were non-known item search strings that could be reconciled against FAST.[21] Even without most using subject facets within the repository, users still benefit from FAST subject assignment. Accordingly, staff approach FAST application as a practice more akin to tagging rather than rigorous subject analysis, to facilitate basic discoverability without intensive work.

Another fundamental difference in the application of FAST terms between the Niner Commons and Goldmine repositories is due to staffing, as the repositories are managed by different teams within Atkins Library. Niner Commons is principally managed by one repository manager in the Digital Strategies and Innovation Department. While the Niner Commons repository manager benefits from additional support on special projects and improvements, the day-to-day tasks of ingesting works and generating metadata are handled by the single repository manager. Goldmine, on the other hand, is a more collaborative effort, with approximately twelve staff members supporting the ingestion of materials and the generation of metadata records. While the limited staff supporting Niner Commons certainly creates constraints and limitations on how fast the repository can grow, it does mean that some of the challenges faced in Goldmine

are avoided in Niner Commons. Since the metadata generation is largely conducted by one person, consistent metadata practices are applied—avoiding the situation in Goldmine of different staff members taking different approaches to cataloging within the same repository. This includes the extent of subject cataloging as well as consistency in the terms themselves.

The use and application of FAST within Niner Commons has evolved over the years since the repository's launch in 2019. Initially when the service launched, the submission form that people used to contribute their works to Niner Commons had a section that allowed them to search FAST and assign headings themselves. Relying on user-generated metadata in this way certainly represented and required a less stringent approach to FAST assignment. And while FAST—specifically the searchFAST interface that integrated with the back-end of the Islandora repository system—allowed users to suggest terms and was simple enough for lay users to operate, it was not an entirely seamless process. Overeager users, for example, would sometimes submit too many heading suggestions, with some subject headings being too specific to really facilitate meaningful collocation and browse within the repository. The Islandora back-end system also had trouble automatically calling the URIs for the suggested terms, so even when users did the work of assigning terms, the repository manager would still need to use searchFAST to collect the URIs. This experience demonstrated that even though FAST was more understandable to users and they could suggest headings—something that could never happen with LCSH—much of the subject description work still had to be mediated and handled by the repository manager.

In the fall of 2022, the submission form for the repository was wholly reworked to be more streamlined, eliminating fields about citation data to ultimately ask users to only submit their contact information, the document, and sign a release. This was in response to a usability

study, along with anecdotal user feedback from faculty, which both said that the submission form was too long and tedious.[22] Staff streamlined the form accordingly, modeling the submission form in part off of MacEwan University's repository submission form in hopes that the simplified submission process would encourage more deposits from faculty.[23] As such, now the repository manager wholly assigns all FAST subject terms. This has aided in ensuring better consistency with subject description, but does represent a greater time commitment.

Applying FAST in both Niner Commons and Goldmine—two digital repositories with very different content types, discovery methods, and support staff—has afforded a unique view into how FAST works in different contexts. In particular, it has emphasized how it excels with a lightweight application that provides some subject discovery but not exhaustive or comprehensive description, and is especially well equipped to describe material that is more targeted or specific in scope. Staff at Atkins have recognized the need to harmonize practices across repositories, to share insights for collective benefit while also being mindful of the differing nature of collections between the two repositories and their specific needs.

A new approach: De-siloing practices

DEIA in Descriptive Practices Working Group

In August 2021, a group of twelve librarians, archivists, catalogers, and oral historians from throughout the library met and started their work as part of the DEIA in Descriptive Practices Working Group. The group's charge centered around devising strategies to address controlled vocabulary terms and other language used in the descriptions of resources about people of color and marginalized communities that are harmful and offensive.

Importantly, the working group offered an opportunity for staff supporting Goldmine and Niner Commons to evaluate existing cataloging policies and practices and develop new ones together. One of the group's initiatives centered around evaluating DEIA issues within FAST, which has inherited many of the problematic headings of LCSH. Since much work is being done by the broader library and information science community regarding equity issues within subject cataloging, the group's first step was to be well versed in the literature. Work coming from the Cataloging Lab,[24] Archives for Black Lives in Philadelphia,[25] and Triangle Research Libraries Network (TRLN)[26] were especially helpful in compiling a list of offensive subject terms to check metadata records against. Once a problematic term was identified within the two repositories, wherever possible staff tried to source a replacement term from resources coming from the affected community,[27] such as sources like Homosaurus,[28] a vocabulary of LGBTQ terms, and community working groups like the Manitoba Archival Information Network (MAIN) - LCSH Working Group.[29]

One challenge staff faced as part of this project is that many DEIA resources on remediating subject terminology center around LCSH. This means that any spreadsheets or code for remediating subject terms usually have to be adjusted from LCSH to the corresponding FAST terms, adding a step of work (see TRLN's remapping configuration file, for example).[30] Additionally, the post-coordinated nature of FAST itself can complicate replacing offensive terms—and as there is no recourse to suggest terms within FAST outside of LCSH, there is no clear solution to this issue. For example, for the term "Indians of North America," the MAIN - LCSH Working Group recommends that the LCSH term be changed to "Indigenous peoples--North America."[31] For the same FAST term "Indians of North America," however, they recommend deleting the term altogether, as FAST does not use geographical subdivisions. Doing

so for the Goldmine and Niner Commons repository records would eliminate a valuable access point for these resources. For now, staff have added two FAST terms to those records as a compromise—"Indigenous peoples" and "North America"—but valuable context is lost with this approach. This approach also introduces the overly broad term "North America" to the record, adding noise rather than improving discovery, particularly for users who are less familiar with advanced searches that combine subject terms. It would be helpful in such instances to be able to propose new terms directly to FAST.

The FAST reparative cataloging project is iterative and ongoing work. As the project continues, staff have identified terms in which there are no clear resources developed by the affected community with replacement terms. For example, FAST only has the term "Hispanic Americans," citing "Latino Americans" as a used-for term, despite the two terms having distinctly different meanings ("Hispanic" describing people with ancestry from a country whose primary language is Spanish and "Latino" describing people with origins from Latin America and the Caribbean).[32] That the two terms do not have corresponding FAST terms is the first issue, with the second being whether or not "Latinx" or "Latina/o" should be used instead of "Latino." "Latinx" is a gender-inclusive term has been gaining popularity for the past ten years within academia,[33] but within the community, a Pew Research Center survey found that only 23% of adults who self-identify as Hispanic or Latina/o have heard of the term "Latinx," with only 3% using it to describe themselves.[34] For such terms where there is no vocabulary or working group from the community providing guidelines, staff are in the process of developing a usability study in which Atkins Library users from those communities can speak to what term best describes them. Ultimately, the working group has found that FAST is not comprehensive of different communities and backgrounds, while also including outdated and offensive terms.

Using FAST in a way that is respectful to users requires manual intervention and analysis through a DEIA lens.

Practically speaking, the DEIA in Descriptive Practices Working Group strengthened relationships between staff who manage the two repositories and largely have not previously worked on projects together. In the FAST remediation project, for example, much of the work was done by the Niner Commons repository manager and an oral historian for Goldmine, who before this had not worked together. This collaborative approach to addressing issues was necessary, as the same problematic vocabulary appears in each repository and must be dealt with in a cross-depository way. Going forward, staff are better equipped to think collaboratively and consult one another on metadata issues.

ETD remediation project

Operating from a similarly collaborative spirit, Atkins recently completed a remediation project that reflects the evolving approach to FAST application—namely, swifter tagging practices that are balanced with the need for accurate, respectful description of resources. The remediation project concerned the electronic theses and dissertations (ETDs) housed in Niner Commons. Currently ETDs are automatically routed to the repository via ProQuest, who also supplies the metadata records for the ETDs. These records include subject description sourced from ProQuest's own local subject terminology, and do not use LCSH or FAST. This created problems within Niner Commons, as ETDs could not collocate with other works in the repository, often creating duplicative and irregular terms within the subject facets.

To address this problem, staff developed a remediation project to reconcile the ProQuest subject terms against FAST, thereby ensuring that all works within Niner Commons had FAST

subject terms. In evaluating the issue, it was clear that the remediation approach had to be swift, and preferably automated—largely because of the high volume of records, which included approximately 2,600 legacy records and an anticipated 350 future records to be received annually. Additionally, limited staffing could be devoted to this effort, as these records are within Niner Commons, which is supported by a smaller team. The team for this special project consisted of the repository manager, the metadata librarian (who supports metadata initiatives across the library), and an IT staff member. Accordingly, inspection and cataloging of individual ETDs was not an option.

Staff began remediation efforts by extracting the ProQuest subject terms from the legacy ETD records to create a starting list of ProQuest terms. Staff then reconciled these terms within OpenRefine against FAST, utilizing a reconciliation service.[35] The FAST matches automatically generated by the reconciliation service were evaluated for accuracy as well as for adherence to new local metadata standards for diversity, equity, inclusion, and accessibility. During this process staff identified several reconciled terms that were offensive and outdated. Following the practices outlined by the FAST DEIA remediation project, staff made substitutions from alternative vocabularies like Homosaurus or followed recommendations from DEIA cataloging working groups, noting any changes in the shared FAST cataloging guidelines for Niner Commons and Goldmine.

Once the list of FAST matches had been finalized, the FAST terms and their URIs were reuploaded to OpenRefine, where the templating export function was used to map the terms and identifiers to XSL “variable” elements and the ProQuest subject terms extracted from legacy metadata to XSL “if” elements. The blocks of XSL elements were then exported from OpenRefine and incorporated into an XSLT designed to apply one or more FAST subject terms

and their URIs when matched ProQuest subject terms were encountered in legacy ETD records.[36] After the initial transformation was run on the ETD metadata, staff applied a cleanup XSLT to remove duplicate FAST terms that had been inadvertently assigned to some records. Subsequently, the remediated ETD records were reuploaded to the Niner Commons repository and reindexed. All that remained to be done at that point was to retrofit the XSLT used to process new ETD records from ProQuest so that it would apply the same group of FAST subject terms to incoming ETD metadata.[37] Regular adjustments to the XSLT will need to be made to provide FAST matches for previously unencountered ProQuest subject terms in future ProQuest ETD records.

[Figures 1 & 2]

The project achieved several objectives. First, it demonstrated that "good enough" FAST subject terms could be successfully applied through automated means to records in bulk, bypassing record-by-record assignment of terms by metadata staff. Additionally, the project showed how FAST terms could be fruitfully combined with terms and URIs from other subject schemas such as Homosaurus that describe marginalized groups with greater sensitivity and appropriateness. ETDs are relatively uniform in subject matter and content, of course, making them more appropriate candidates for automated methods of applying subject terms than repository materials with more complex content. For the latter, manual assignment of terms will continue to be necessary in many cases. Nonetheless, the ETD remediation successfully developed new methods for applying FAST vocabulary in the repository environment in swift, automated ways that depart completely from the LCSH-inspired model of FAST assignment that has predominated at Atkins Library.

At the same time, the DEIA and ETD metadata remediation projects demonstrated the continued need for careful evaluation and selection of FAST subject terms, even when they are applied through an automated process. That FAST can be deployed as a lightweight, keyword-like vocabulary through a "tagging" approach does not mean that scrutiny of the descriptive accuracy and appropriateness of its individual lexical units can be avoided. DEIA metadata remediation efforts taking place more broadly in the cataloging and metadata community have brought new attention to the ways in which controlled vocabularies like LCSH—and by extension, FAST—can misrepresent resources and cause harm to users. To ensure that FAST is meeting the discovery needs of users in the most effective, respectful, and inclusive manner, metadata staff must select and apply terms with care. The collaborative ETD remediation project at Atkins suggests how such scrutiny can take place as part of an automated process, through a screening of groups of FAST terms that will be used in a project before they are applied to individual records. Yet a granular attention to subject terms remains an ineluctable part of the description process.

Reflections and future directions

Atkins Library's evolving experience with the FAST over the past eight years reflects the complex, hybrid nature of a vocabulary that is derived from LCSH and deeply informed by LCSH practices of term assignment and yet is at the same time a more simple, faceted subject schema designed to be applied like keywords. Thus far in its various experiments with the subject schema, Atkins has only partly succeeded in balancing the need to provide high-quality subject access to repository materials with that of achieving the greater cataloging efficiencies that a simpler, more lightweight subject schema should ideally deliver. In lieu of a perfectly

calibrated approach to FAST, what this article can offer by way of conclusion are several observations gained from the experience of grappling with the vocabulary in the repository setting over several years.

First, while FAST benefits from the richly descriptive terminology it inherits from LCSH, the close connection between the two vocabularies is not without its dilemmas. As Atkins' experience has shown, attempts to replicate LCSH term assignment practices in the use of FAST results in diffuse, imprecise subject description and an overuse of terms due to the schema's faceted nature. Such legacy practices also appear to slow or at least not significantly increase the rate at which descriptive work is performed, one of the very problems FAST was devised to alleviate. For these reasons, Atkins has concluded that using FAST with maximum effectiveness requires breaking in large part with the LCSH tradition of subject description, at least as it is used in in-depth indexing of materials, and opting for a more minimal approach.

Yet while treating FAST as a lightweight "tagging" vocabulary relieves some of the difficulties associated with an LCSH-inspired practice of term assignment, it can create others, such as overly minimalistic subject metadata. Compounding this issue, the absence of widely accepted guidelines on best practices for FAST application can encourage an impressionistic, anything-goes approach to term assignment that misrepresents the subject content of repository materials and results in inconsistencies in subject indexing in different collections. As of this writing, the only available guidelines remain the Chan and O'Neill textbook,[38] which adheres somewhat closely to an LCSH model of term assignment, and the FAST quick start guide,[39] which provides an overview of the structure and syntax of FAST headings but offers few pointers on its practical application. It is to be hoped that widely accepted best practices, standards, and guidelines for applying FAST will be developed, along with studies that identify

more precisely how FAST subject terms are used in discovery. Until such standards and best practices are available, FAST users will have to rely on local approaches, basing decisions about the granularity of subject description on available staffing levels, the type of materials involved, and other factors.

FAST's reliance on LCSH and OCLC as the exclusive sources of its terminology has its own drawbacks. In the absence of other avenues for the creation of new terms, FAST users with subject description needs that the schema does not satisfy must either submit authority records through NACO or SACO channels and wait for the creation of FAST equivalents, create FAST terms for purely local use, or use another subject schema altogether. Reaffirming FAST's identity as a "downstream" vocabulary that "follow[s] LC's lead," a 2017 OCLC blog post about proposed changes to the "illegal aliens" terminology in LCSH stated that OCLC had "no plans to establish a FAST governance model similar to SACO, nor an independent editorial group similar to that at the Library of Congress."[40] Yet FAST's umbilical attachment to LCSH and OCLC, which has already raised concerns in the cataloging community about the vocabulary's long-term sustainability,[41] could impede its ability to maneuver in a dynamic, rapidly changing metadata environment in which participants in DEIA metadata initiatives like the one at Atkins Library are asking that controlled vocabularies be more responsive to the needs and sensitivities of users. Taking some preliminary steps towards greater autonomy, such as introducing new pathways through which new FAST terms can be created and existing terms changed, could make the vocabulary more agile and flexible, and thus help solidify its status as a viable alternative to LCSH.

As for what the future holds for Goldmine and Niner Commons, the collaborative DEIA metadata and ETD remediation projects have opened the way to new explorations of how subject

metadata in the two repositories can be better harmonized and the cross-repository user experience made more consistent as a result. The most likely direction for improvement harmonization is the implementation of a more minimal, lightweight approach for FAST usage in Goldmine, either via a broader use of the reconciliation and XSLT strategy developed for the ETD project, the pre-selection of a restricted group of FAST terms for certain projects that can be applied through spreadsheet dropdowns, a more parsimonious application of terms by individual metadata staff performing record-by-record description, or a combination of all three. Central to this strategy will be the development of cross-repository FAST guidelines that can be applied to multiple collections and the retraining of staff in more swift, sparing FAST approaches. Some of this work is already underway.

A complicating factor in implementing this simpler approach is the different descriptive requirements of Goldmine collections, which vary significantly in subject matter and depth and content type. A perfectly uniform approach to FAST that can be applied equally effectively to photographs, digitized books with diverse subject content, and oral history interviews, for instance, is probably not possible, even if a greater degree of uniformity in the depth of subject indexing with FAST can be achieved. In addition, any cross-repository strategy for FAST harmonization will have to contend with inconsistently applied subject metadata in existing records. Debulking subject content in legacy records would clearly be labor-intensive and counterproductive. For this reason alone, some measure of variation in the granularity of subject metadata is inevitable in both repositories, as in fact it was in databases and catalogs with content described with LCSH. Yet a greater degree of uniformity in the depth of subject indexing with FAST can almost certainly be achieved in future projects, if not in legacy metadata.

Conclusion

Despite the difficulties involved in learning to use a new subject schema to optimal effect, Atkins Library has derived significant benefits from transitioning from LCSH to FAST. The more fleet, lightweight vocabulary has allowed it to cope with the increased metadata responsibilities associated with the launch of two new repositories and to rapidly train a range of inexperienced staff and student workers in subject description techniques. Both repositories combined now have nearly 30,000 metadata records with at least some minimal form of controlled subject vocabulary terms, a feat that could never have been accomplished at Atkins using a pre-coordinated schema like LCSH, given tight staffing and funding constraints. Recent experiments in automated term assignment suggest ways in which FAST can be used at Atkins to achieve even greater efficiencies in subject tagging. After eight years of using the schema, Atkins has learned through trial and error—and above all, through collaboration among staff in its two repositories—to avoid some of the pitfalls of usage to which it sometimes has been prone in the past and identify more economical, consistent term assignment practices that will undoubtedly accelerate the pace of future metadata projects in Goldmine and Niner Commons alike.

What remains to be accomplished is the development of a more consistent approach to subject description with FAST that can be applied to multiple collections, as well as guidelines and standards that even a simpler vocabulary requires to be used effectively. Undoubtedly shared by other libraries and archives that have adopted the subject schema, these goals are more likely to be achieved through collective, shared initiatives by the growing FAST community to develop best practices and standards than through separate, siloed efforts to use a vocabulary that is more complex and thus less “fast” than it may first appear. Atkins’ experience demonstrates some of

the gains that individual institutions can make by grappling with FAST, but it also reveals some of the limits of an isolated, uncoordinated approach to its implementation. For Atkins and for other libraries and archives using FAST, future progress with the subject schema will almost surely emerge from greater cooperation, collaboration, and sharing with others in the growing FAST community, not from solitary experimentation and innovation alone.

Disclosure statement

The authors report there are no competing interests to declare.

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Table 1:
Subject terms for the Kelly Alexander Jr. oral history interview record.

Facet	Term
Interview Occupations	Executives
	Public officers
Subjects--Names	Alexander, Kelly M., Jr., 1948-
	Alexander, Kelly M.
Subjects--Organizations	National Association for the Advancement of Colored People
	Friendship Missionary Baptist Church (Charlotte, N.C.)
Subjects--Topics	Political leadership
	African Americans--Segregation
	Segregation in education
	School integration
	Busing for school integration
	Race relations
	Education
	Civil rights movements
	Civil rights demonstrations
	Cities and towns--Growth
Subjects--Geographic	North Carolina--Charlotte
	North Carolina--Charlotte--Brooklyn
	North Carolina--Charlotte--Second Ward
Subjects--Genre	Interviews
	Oral histories

Figure 1:
Excerpt from an ETD metadata record before remediation.

Genre	doctoral dissertations
Degree	Ph.D.
Keywords	AGENT-BASED MODELING COMPUTATIONAL SOCIAL SCIENCE EMOTION CONTAGION NATURAL LANGUAGE PROCESSING SOCIAL MEDIA SOCIAL MOVEMENTS

Figure 2:
Excerpt from an ETD metadata record after remediation, with reconciled FAST terms.

Genre	doctoral dissertations
Subjects--Topics	Sociology Information technology System theory
Degree	Ph.D.
Keywords	Agent-Based Modeling Computational Social Science Emotion Contagion Natural Language Processing Social Media Social Movements