Analyses on the History, Form, and Use of the Essen Folksong Collection

(Intro Slide)

Helmuth Schaffrath and colleagues at the Hochschule für Musik in Essen, Germany started putting together the Essen Collection in 1982 while working on a new method for quickly and accurately encoding printed music into a computer-friendly format named the Essen Associative Code or "EsAC" (Schaffrath, 1995). The first public releases of the Essen Collection provided nearly 6,500 folksongs collected from various *Volkslied* publications from the nineteenth century. It was divided into twenty-five different subsections, each supposedly named after the archivist who first collected the printed manuscripts. Under Schaffrath's successor Ewa Dahlig-Turek's leadership, and through the work of music scholar David Huron, the folksongs within the Essen Collection were eventually transcribed from their original EsAC format to the new **kern format (Huron, 1995). Now existing in two different formats, the Essen Collection quickly became one of the most frequently used large database of symbolically noted music across the field of computational and systematic musicology, boasting an astounding 216 citations within the past twenty-five years.

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While the Essen Folksong Collection influence in scholarly music research is without question, our understanding of its history, form, and use are extremely limited. In light of new developments in the way that we understand what it means to construct and analyze a "corpus", it is important that we understand the materials we are working with and the kinds of information

those materials provide for us. In this presentation I discuss just a few of the many controversies surrounding the Essen Collection. To discuss all of the potential problems surrounding the Essen Collection and its use over the past two decades would take much more time than this presentation allows. Instead, I will present some of the most controversial aspects of the Collection such as the unclear and possibly even incorrect attribution of the Collection's source materials, the issue of inserting or deleting important musical information into the Collection by the collectors themselves (e.g. phrase information), and the overuse/misrepresentation of the Collection in scholarly works. In discussing these matters I do not wish to place blame on any individual or organization. However, if we are to understand how best to create future corpora, then we must address areas where past scholars have found trouble with this task.

The Origins of the Essen Collection

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What form the Essen Folksong Collection was meant to originally take is a question that holds some controversy. As it stands today, the Germanic portion of the Essen Collection contains 6,220 monophonic melodies. It is widely assumed that the Essen Collection is a collection of German folksongs, but there are many issues with this assumption. According to the Center for Computer Assisted Research in the Humanities (CCARH), there seems to be nine books of folksongs from which the original twenty-five subsections of the Essen Collection are derived (CCARH, 2015). Yet, it is clear when searching through the original source material presented through the CCARH platform that they are not entirely certain that these nine books are the printed scores that form the encodings found in the Essen Collection. The nine books of printed scores are encoded across twenty-five subsections, though not all of the subsections have a primary source attributed to them (e.g. "test" and "variant") Some suggested primary sources

also seem highly unlikely to be the actual sources used by Schaffrath (as what appears to be the case with the "ballad" and "allerkbd" subsection).

It is supposed that folksongs found in the Essen Collection are derived from printed nineteenth-century German *Volkslied* publications. Some of the misconceptions surrounding this statement should be addressed. First, it is unclear that the source materials include only nineteenth-century folksongs. For instance, the subsections pulled from the work of archivist Franz Magnus Böhme include folksongs from the eighteenth century as well.[1] It is also unclear whether folksongs in the Essen Collection can be accurately and confidently labelled "German". The history of Central Europe is rife with cultural struggles and shifting cultural identities. Given this and the inherent danger in German nationalist sentiment during the nineteenth century, it is difficult to say with confidence that all folksongs included in this Collection are indeed representative of German culture. It is also difficult to accurately define what constitutes German culture during the nineteenth century. With little information regarding the exact content of the original source material, it is rather dangerous to assume that the Essen Collection is a representative sample of nineteenth-century German folksong.

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The largest subsection of the Essen Collection, supposedly derived from *Deutscher Liederhort* (Erk, 1893, 1894), provides an opportunity to examine another problem with the supposed primary sources of the Collection. Titles of various songs in Erk's collection cannot be found in the "erk" subsection of the Essen Collection itself. Similarly, searching for various

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[1] Examples of this can be seen in several places. Firstly, the full name of the Böhme's collection is *Volksthümliche Lieder der Deutschen im 18. und 19. Jahrhundert* which strongly suggests that songs in this collection come from different time periods. A brief search of the source provides many dates attributed to songs before the year 1800. Some examples include: *Das Deutsche Mädchen* (1790), *Reiterlied aus "Wallenstiens Lager"* (1797), *Erneuter Schwur* (1724), *Der Burgunder* (1745).

songs in the "erk" subsection returns no results in Erk's original sources. It is possible that names of songs have been changed during the encoding process, and it is also possible that certain songs from Erk's collection were simply left out of the Essen Collection. However, this problem is not beholden to the Erk archive alone. Many songs mentioned in the primary sources simply do not appear in the Essen Collection itself, and vice versa. Therefore, it is difficult to say with certainty that a primary source suggested by the CCARH was the same source encoded by Schaffrath in the original EsAC form of the Essen Collection.

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Historical anthropologists have noted for quite some time that cultures, and the regions in which they are located, change frequently over time. A cultural group or region that was once a willing and active participant and contributor to the sense of a Germanic culture may not feel the same way today. In discussing the nature of German cultural identity, I only wish to draw attention to the troublesome nature of labelling folksongs in the Essen Collection as "German" folksongs. I also want to point out the impossibility for modern scholars to be able to retroactively determine which of the folksongs actually belong to a different culture or identity. Therefore, with these concerns in mind we might ask how these issues might affect the content of the Essen Collection.

While archivists were collecting materials for the primary sources that would come to make up the Essen Collection, one of the biggest issues with the malleable definition of "German folksong" arises concerning which music gets to be collected. Given the wide geographical range of songs included in the Collection, it seems possible that the original archivists were collecting folksongs from regions all sharing the use of the German language. Therefore, folksongs found in the Bohemian and Hungarian regions, if there existed versions with German translation, would

eventually find themselves placed in the Essen Collection. Similarly, folksongs found in Austria and Switzerland would also be included in the Essen Collection due to their strong relationship with the German cultures to their north regardless of cultural superpower-like quality of the Austro-Hungarian Empire and the immense cultural diversity of the Swiss region. Conversely, songs that very well may have had Germanic origin but now only exist in another language would be quickly skipped over during the initial collection efforts. Given the fluidity of cultural identity, it seems entirely likely that this would have happened to a number of folksongs that, while no longer found with German text, could easily fit the requirement of being "German". Many of the assumed primary sources for the Essen Collection present only folksongs that have lyrical information. Needless to say, this form of presentation strongly suggests that the original archivists did not collect any instrumental folksong material.[2]

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The problems of the twenty-five subsections and their content continue. It is unclear how Schaffrath went about dividing up the nine primary sources into the twenty-five subsections. For example, while the largest primary source of the Collection (constituting the "erk" source) is only split into four subsections, the "ballad" source, less than half its size, is split into eight subsections. Similarly, the "zuccal" source, nearly equal in size to the "ballad" source, includes only one subsection. While this issue of divisions of subsections is not necessarily that troublesome, the fact that we do not know why or how Schaffrath divided up the subsections in the Essen Collection only adds to the mystery surrounding the origins of the Essen Collection. It should also be noted that Huron, in his transcription of the Collection from EsAC to **kern,

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[2] Of course, it remains to be seen whether there exists instrumental folksongs that do not have any sort of sung text attributed to them.

elected to consolidate most of the constituent parts of the original subsections into one subsection

per source each (Huron, personal communication, March 3, 2020).

In terms of both genre and culture classification, there are additional problems with the

Essen Collection. As part of his detailed work in encoding metadata for the Essen Collection,

Schaffrath included genre classifications for each song found in the Collection. The problem

with this is that many folksongs spread across the primary sources do not have any genre

classification attributed to them. One cannot help but wonder how exactly Schaffrath came to

classify these songs. A similar situation arises in the case of geographic location. For each of the

songs in the Essen Collection, Schaffrath included metadata information regarding the location

of origin dictated in the primary source material with varying levels of specificity. However,

once again the primary source materials do not seem to echo this information. It therefore,

becomes rather difficult to determine exactly where Schaffrath came upon this metadata

information for the Essen Collection encodings.

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Perhaps more troublesome than the question of genre is the issue of phrase segmentation.

Much of the work on melodic expectation that has been done within the past twenty years relies

on the phrasing information present in the Essen Collection. This reliance on phrasing

information is immensely troubled by the fact that none of the original folksong materials in the

Essen Collection actually contain any phrase-related information. There are no phrase markings,

no formal designations, nor even many special barlines or repeat signs that might indicate phrase

boundaries. Instead, the original encoders of the Essen Collection took it upon themselves to

insert phrase boundaries in places where they felt were most likely points of phrase

segmentation. It should be easy to see how this might cause issues.

Lastly, it is important to recognize that since the first presentation of the Essen Collection in 1995, scholars have continued to work with EsAC in order to provide more and more databases of folksong materials. Professor Dahlig-Turek has overseen much of the archival work that has been done with EsAC project in the years since Schaffrath's death. In that time, one substantial database and several small collections of folksongs have been added to the project covering Eastern, Southern, and Western Europe and even various parts of China. A variety of other national folksongs have been added to the collection, some from the Americas, a small portion from Africa, and even a fairly large portion from modern-day nations outside of Germany in Europe. The addition of folksong materials outside of Central Europe as well as the controversy surrounding the origins of the Germanic folksongs themselves suggest that perhaps we redefine what the Essen Collection actually means. In professor Dahlig-Turek's words, "[The] Essen Collection is an informal term used for the oldest encodings…These new repositories do NOT belong to the Essen Collection." (emphasis in the original) "In [Dahlig-Turek's] opinion, there is not much use of speaking about [the] Essen Collection, but rather the EsAC Collections"(Dahlig-Turek, personal communication, January 19, 2020). "

In summary, the origins of the Essen Collection, including the exact primary sources used to build the Collection, are in question. Some subsections (like "test" and "variant") have no purported origins. Others do not precisely match up with their purported primary source materials (like "erk" and "allerkbd"). Still more suffer from problems of genre classification (like the "ballad"). In addition are many questions regarding the Collection's structure. How were phrases determined in these folksongs? And what determines the division of the different subsections? Surrounding these issues is a fog of uncertainty regarding both the date of origin and the location and/or culture of origin. These problems together suggest that scholars treat the

the Essen Collection with utmost care, and make sure that these issues are at least mentioned where relevant in their academic work.

Scholarly Attention to the Essen Collection

Much of the research involving the Essen Collection can be split into three broad and overlapping categories. These are: research focusing on topics of music cognition and empirical musicology, research focusing on computational modeling and music information retrieval, and a much smaller category that primarily focuses on musicological, theoretical, or ethnomusicological questions. We might describe these three categories of research as proscriptive experimental research, computational modeling research, and descriptive experimental research accordingly.

I do not have time to cover each paper in each category in any substantial detail. Instead, let us turn our attention to some of the more troublesome aspects studies from each of these categories. Keep in mind that just as there are many issues with research involving the Collection, there are just as many instances where scholars have adequately addressed those issues in their work. The following analyses are only meant to draw attention to aspects of the Collection's use that can be remedied, not to single out some specific scholar or field. In all honesty, many of the following works are my own personal favorites. However, that does not mean that there are not issues with treatment of the Collection in these studies.

Proscriptive Studies with the Essen Collection

Most, if not all, of our understanding of the content and structure of the Essen Collection comes as an afterthought to the main goals of the studies that make use of the Collection. The various works of David Temperley (2000, 2003, 2004, 2007, 2008, 2009, 2014, 2019) serve as excellent examples of this altogether too common theme in studies regarding the Collection. Temperley's work has often found interesting facets of the Essen Collection including specific aspects of pitch distribution (Temperley & Marvin, 2008), interval/duration distribution and modality information (Temperley, 2008), and even contour and accent information (2014). It is not inherently problematic that scholars are not explicitly focusing on the Collection itself when uncovering aspects of its structure. However, this "stumbling upon" of aspects of the Essen Collection occurs in most scholarly works in this category including those of Toiviainen & Eerola (Eerola et al., 2001, 2002; Toiviainen & Eerola, 2001, 2003, 2006b, 2006a, 2001, 2002, 2005, 2004).

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Scholars including Bailes (2010), Bernardes et al. (2016), Brinkman & Huron (2018), Dean & Pearce (2016), and Hannon et al. (2004) use the Essen Collection with the assumption that the Collection is made up of simple melodies. Just because a melody might be derived from a monophonic folksong does not inherently mean that the melody is not complex. Still others like Ammirante & Russo's (2015) work used the Essen Collection as a primary sample of Western vocal melodies. It is highly dangerous to assume that the Essen Collection is comprised solely of vocal melodies given the unclear primary source materials of some of the Essen's subsections. Huron et al. (2010), Yim (2014), Margulis (2007), Schäfer et al.'s (2015), and still other's work, all involving research on emotional aspects, rely on the Essen Collection as a convenience

sample while only briefly touching on the inherent assumptions of the Collection, providing

plenty of opportunity for unexpected variables and biases affecting results.

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Computational Modeling Studies

The second and, by far, largest category of studies conducted using the Essen Collection deals

with the topics of computational modeling and machine learning. Many of the studies in this

category involve the creation, training, and testing of computational models of various aspects of

human cognitive processes. Due to the nature of this kind of research, it is very common for

papers on this topic to cover topics also related to proscriptive and/or descriptive research.

However, in all of these instances of interdisciplinary work between modeling and other

musicological topics, the focus is rarely on an investigation of the topic itself and almost always

on the modeling techniques employed.

  The work on computational modeling done by Pearce & Wiggins (2003, 2004, 2006, &

2012), covers a wide variety of topics. It can be said that, like many other scholarly works falling

into this category, Pearce & Wiggins do an excellent job of defining the Essen Collection and its

role in their work. However, as other scholars have already addressed (Hilllewaere et al. (2012),

Van Kranenburg & Janssen (2014), Lattner et al. (2015), and Cenkerová et al. (2018),) there is

currently an overwhelming number of computational models in music research that have been

either tested or trained on the Essen Collection. Regardless of whether scholars adequately

address the hazards of the Collection, it is still rather worrying that so many models are being

developed in some part by the Essen Collection. Surely if these models, the majority of which

attempt to address fairly substantial questions in music research, are meant to emulate Western

music as a whole, then we should take care to make sure they are tested and trained on a wide variety of Western musics, not solely those folksongs of the Essen Collection.

Many computational modeling studies often do not address any specific aspect of Essen Collection, electing simply to use it, in whole or part, without question (Rohrmeier et al. (2011), Eerola & Toiviainen (2002), Sadakata (2006), Mullensiefen & Wiggins (2011), Elowsson & Friberg (2012), Flossman (2012)). Similarly, with the exception of Mullensiefen & Wiggins (2011), none of the above papers, nor do many computational modeling papers in general, discuss where measurements necessary for a given model were taken from within the Essen Collection. As the Essen Collection itself presents a diverse range of information, it is important that authors are as clear as possible when discussing how a given metric was determined using the Collection. Otherwise, these and future studies run the risk of not accounting for unknown variables present in the Essen Collection's various subsections. This is especially true for situations in which measurements taken from the Essen Collection are used to build databases of "new" or "pseudo-" music.

The rest of the computational modeling studies involving the Essen Collection come with a fair number of issues. Most of these papers simply state that they are using a number of folksongs in the Essen Collection, not bothering to mention which subsection these folksongs came from, why they were chosen (other than for simplistic reasons like the Essen Collection being a sampling of folksongs, or of European music), or how they were selected (Cherla et al., 2015; Juhász, 2009; A. Lambert et al., 2014; A. J. Lambert et al., 2014; Ronca, 2009; Sadakata et al., 2006; Tanji et al., 2008). A few studies mention using the Essen Collection, but either do not

mention how much of the Collection was used or do not provide any information regarding the sampling process (Ren, 2016; McLeod & Steedman, 2017).

Descriptive Studies

Constituting the smallest portion of studies citing the Essen Collection, research in the descriptive category involve investigating musical questions directly related to the content of the Essen Collection. Unlike proscriptive research which tends to focus on questions of perception and cognition, this category focuses on specific kinds of musical phenomenon in the Essen Collection and how those phenomena might be related to other musics.

Out of all the authors encountered while pouring through the literature citing the Essen Collection, no other author provides as much detail regarding the Essen Collection and its many potential issues as Huron and his colleagues do (Huron, 1996; Huron & Royal, 1996; von Hippel & Huron, 2000; Li & Huron, 2006; Huron et al., 2010; Shanahan & Huron, 2011; 2012; Schafer, Huron, et al., 2015; Brinkman & Huron, 2018, , Shanahan & Albrecht, 2019; Van Kranenburg et al. 2007, 2010; and Yim, 2014). However, in all of their openness in dialogue regarding the structure and use of the Essen Collection, there are some issues that Huron and his colleagues do not address. For instance, when creating samples of the Essen Collection materials, Huron and his colleagues do not control for whether the samples end up being unequally distributed from the different subsections nor do they adequately address the issue of the Essen Collection's Germanic quality.

Conclusion

So what exactly is the Essen Folksong Collection? And how should we address it? It is rather unclear what exactly the Essen Collection is, but we at least have a good idea about what it seems to be. It seems to be a database containing folksongs pulled from Germanic regions of Central Europe during the nineteenth-century. It also seems to be a database of potentially monophonic musical material encoded in both the EsAC and **kern formats. Scholars would do well to keep these fragile definitions in mind when deciding to use the Collection in the future. Otherwise, the toll could be significant as the repercussions derived from the number of assumptions made from working with the Collection become unmanageable. By being as transparent as possible, and by making clear the assumptions one makes when electing to use the Collection, scholars will certainly have a better understanding of the place their results take in the greater world of music research.

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