Digital Music Editions Beyond [Edited] Musical Text

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The bracketed addition which I made to the original title of this article might seem to be a necessary addition, but an addition which nevertheless belongs to a still very strange title. This applies all the more to the title originally announced for this section: *Digital music editions beyond musical text*. This sounds as if a corrupt version had been transmitted to the organizers of the conference, or as if the author really had no clear concept of a scholarly music edition. In the second case one could clearly point him to the common opinion, that the intention of a traditional music edition is undoubtedly the creation of an 'edited text' and the documentation of the reasons which led to the individual decisions for choosing this or that version of a note, an articulation sign, a phrasing slur or even the form of whole bars. Producing such editions without the musical text must be labeled as completely senseless. – And why should this be different in a digital edition?

If we reconsider the development of our traditional, analogue editions, we have to admit that the 'text' beyond the musical one in these volumes has grown considerably over the last decades. And if we go back to the foundation stones of our Critical Editions in the 19th century this trend is even more distinct.[1] The first volume of the 'Old Bach Complete Edition' with ten church cantatas which Moritz Hauptmann edited in 1851 had – besides the general introductory pages and the impressive list of subscribers – only six pages describing the content, the sources and the editor's approach.[2] The volume with the Mass in B flat minor, produced by Julius Rietz in 1856 at least had 14 pages of Critical Report.[3] When the New Bach Edition was initiated after the Second World War, the first volume in 1954, again with cantatas, had 117 pages with music, but a separate volume with 112 pages of Critical Report.[4] The second volume, also published in 1954 and containing Friedrich Smend's edition of the *Missa* with more than 400 pages of

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1   For a more detailed description of this development cf. Kepper, 2011.

2   Bach, 1851, pp. XV-XX.

3   Bach, undated [1856], pp. XIII-XXVI.

4   Bach, 1954; Bach, 1955.

Critical Report (published in 1956) clearly outweighed the 280 pages of music.[5] But even beyond such monuments, we can observe a similar development in recent complete editions, and I mention only three examples in a random selection here: Johannes Brahms, 4th symphony: 128 pages of music, 112 pages of text; Carl Maria von Weber, *Der Freischütz*: 454 pages of music *versus* 422 pages of text, and Robert Schumann, three Quartets op. 41 with 90 pages of music, more than 200 pages of text and 57 pages with facsimiles.[6]

If we look at the material which has been included in these volumes, we not only find the quickly growing part with 'readings' in the strict sense or very detailed descriptions of the sources, but a lot of other things: performance reviews, letters, facsimiles of playbills, portraits of the performing singers, costume figurines or stage sets for scenes, reprints of librettos or other texts, sketches, and so on. So, even before the advent of digital editions, these volumes have been collections of varied materials which group around the musical text. The digital editions in the last years now have reinforced this tendency in order to embed the musical text in its original or even in various other contexts.

If you look at the two already published volumes of Thomas Betzwieser's OPERA project with *Prima la musica e poi le parole* by Giambattista Casti and Antonio Salieri and Andreas Münzmay's edition of *Annette et Lubin* by Marie-Justine-Benoîte Favart and Adolphe Benoît Blaise, we have – in the printed volumes – a relation of music to text of 222 to 56 in the first and 100 to 81 in the second volume – though, admittedly, the text part shrinks considerably when we take into account that the Preface is given in English, German and French or Italian here.[7] But in this hybrid edition the printed volume is accompanied by a digital publication which on the one hand doubles the printed volume in presenting the complete Preface and the complete edited musical text. On the other hand the former 'readings' section is no longer contained in the appendix of the printed volume but is now included in a form much easier to use in the digital part:[8] annotations concerning music or text are directly connected to their reference place and the explanatory text of the annotation is combined with the referenced excerpts of the mentioned sources. At the same time these sources are accessible as complete facsimiles connected to detailed source descriptions, and you have the possibility to access annotations not only from the edited text but also from the individual source. This allows you varying perspectives on your text, because you do not necessarily need to start from the editor's text. What you lose here, is the kind of survey which you normally have when looking at a complete page with annotations – you still have the possibility to see such a list of annotations, but you are only able to perceive if they concern "Music", "Text" or "Stage

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5   Bach, 1954; Bach, 1956.

6   Brahms, 2011; Weber, 2017; Schumann, 2006. The extensive facsimile appendix is a special add-on of the Schumann edition.

7   Cf. Casti/Salieri, 2013; Favart/Blaise, 2016.

8   In both cases, the so-called *Edirom* software is used, which was developed in a project funded by the Deutsche Forschungsgemeinschaft (DFG) and is now continually developed at Paderborn University (cf. https://www.edirom.de, 07.01.2020).

directions".[9] Certainly this disadvantage is clearly outweighed by the transparency of editorial decisions based on the access to the sources now possible, which, besides, are accessible in a very fine-grained form by simply entering bar-numbers (see Figure 1), which even allows you to compare the same bars from different sources simultaneously.

Figure 1: OPERA, vol. 1: Antonio Salieri, Prima la musica e poi le parole*, Kassel 2013; Accessability of the sources in the Edirom software in a collation bar by bar; example: no. 6, Rondò, Terzetto Poeta, Maestro, Eleonora: "Cari oggetti", bar 5.*

But there is a second big advantage: In both operas the "degree of allusion and quotation"[10] in music and text is extremely high and in Casti's libretto we can observe "different intertextual modes of increasing complexity".[11] In Betzwieser's volume these modes are described in the printed text, while at the same time the digital version presents facsimiles of the most important arias and the text of the central intertextual reference work here, Giuseppe Sarti's *dramma per musica Giulo Sabino.* In Münzmay's edition of the new compositions of the "comédie [...] mêlée d'ariettes et de vaudevilles" *Annette et Lubin*, "recourse to *vaudeville* tunes", parodies and "textual quotations and allusions"[12] are intermingled in a form which is not easy to sort out. As Erik M. Paffett emphasized in his review in *Notes*, Münzmay did this in an admirable form and there is a fine table of "Textual quotations and musical borrowings" in the printed volume.[13] This textual list

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9   Cf. the list entries in the menue "Critical Report / Annotations".

10   Casti/Salieri, 2013, p. XVI.

11   Ibid., p. XVII.

12   Favart/Blaise, 2016, p. XIX.

13   Cf. Paffett, 2018, pp. 687-691, especially p. 690; in the printed opera volume cf. the table on pp. XXIX-XXXII.

has its counterpart in the digital edition, but now not only with more extensive commentaries but also with the original text of the model and with facsimiles of these reference sources (at least in those cases in which they could be identified). In both volumes the edition opens a space for the integration of reference or contextual material beyond the edited text.

This is also true for the Max Reger Work Edition[14] where we find a special entry: "Environment or Context of the Works" which, besides information about the works such as their dates of composition and the sources, contains a lot of other details concerning the reception of the works, the churches and organs for which Reger wrote his works, articles about Reger's working procedures or writing habits and so on (cf. the list in Figure 2).[15] In the case of the organ works you find, e.g., biographical information about Reger's friend, the organist Straube, information about the organ in one of the Berlin churches, a list of performances of Reger's organ works, a review of one of these in the *Neue Musik-Zeitung*, a letter by Reger, an essay about tempo in Reger's works and even a family tree of the Regers. This is really a kind of encyclopedia about Reger which surrounds the edition of his music – and indeed, this is really called an 'encylopaedia' which is accumulated from edition to edition and in near future will be published separately on the Reger website[16] and further developed.

A similar concept can be found in the *Freischütz Digital* project.[17] The contextualization of the work in this case goes so far that it is directly connected to the digital part of the Complete Edition of the composer's 'textual output'.[18] To mention only a few examples: from the detailed description of the genesis of the work[19] the hyperlinks lead directly to Weber's diary entries or letters which are edited independently from the *Freischütz* project.[20] And a list of performance reviews of almost 60 theaters in Weber's time[21] is linked to transcriptions of these texts on the Weber website.[22] There is a wealth of documentation concerning the musical sources (see the 15 sources listed in the menu of the *Edirom* part of *Freischütz Digital*) as well as the libretto and its reference texts

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14 Reger-Werkausgabe (RWA), Editorial Board: Susanne Popp and Thomas Seedorf; editors of the volumes of this hybrid edition: Alexander Becker, Christopher Grafschmidt, Stefan König, Stefanie Steiner-Grage; technical part of the Edirom-editions: Nikolaos Beer; published by Carus, Stuttgart, 2010ff. Critical Notes in the DVD-part.

15 Illustration from vol. I,7 of the RWA, Critical Notes (DVD).

16 Online: https://www.max-reger-institut.de/de/, 07.01.2020.

17 Online: https://www.freischuetz-digital.de, 07.01.2020.

18 Online: https://www.weber-gesamtausgabe.de, 07.01.2020.

19 Online: https://edition.freischuetz-digital.de/, 07.01.2020; cf. the submenu "Musikgenese" and "Textgenese" (in the rubric "Werk").

20 Online: https://weber-gesamtausgabe.de/de/Register/Tageb%C3%BCcher, or: ... /letters, 07.01.2020.

21 Online: https://edition.freischuetz-digital.de/; submenu "Rezeption", 07.01.2020.

22 Online: https://weber-gesamtausgabe.de/de/Register/Schriften, 07.01.2020.

(28 sources in the same list). And you even find audio documents which are linked to facsimiles or to a rendered musical text.[23]

Figure 2: Reger-Werkausgabe (RWA), series I, vol. 7: Organ Pieces III, *Hybrid-Edition, Stuttgart 2015: survey of the context information.*

But the most important aspect in our context here is the – unfortunately only partially realized – idea to present the musical text not as an edition in the normal sense (such an edition has meanwhile been published within the analogue Weber Complete Edition),[24] but to represent the individual sources in a diplomatic transcription in order to be able to automatically compare those transcriptions. This has to some extend been realized for three numbers of the opera and ten of the sources. All these sources are encoded in MEI (Music Encoding Initiative) and thanks to Laurent Pugin's *Verovio*[25] could be rendered in a form that also allows individual comparisons by the reader. The intention here was to use Weber's *Freischütz* only as a proof of concept – and many details still have to be fixed; but nevertheless, this new form leads to new possibilities based on

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23   Online: https://demos.freischuetz-digital.de/syncPlayer/test/syncPlayer.xhtml, 07.01.2020.

24   WEBER, 2017.

25   Laurent Pugin developed his rendering library *Verovio* in the last years at a breathtaking pace (version 1.0 was released in May, 2017) and thus contributed much to the quick acceptance of MEI as an encoding standard for scholarly purposes; cf. online: https://www.verovio.org, 07.01.2020.

the flexibility of the encoding format. To mention only one example (cf. Figure 3):[26] the encoding of original abbreviated forms of notation can coexist with the written-out version as in this passage from the terzetto no. 9 of the *Freischütz.* Experimenting with notation in this way in the end leads to more flexible forms of presenting, exploring and analyzing the musical text. Thus, the future Digital Mozart Edition, for example, will combine the re-edition of the text of the New Mozart Edition with editions of individual sources such as the autograph or the first print in order to allow the musician to choose between these versions.[27] And this is really important in the realm of opera, as Martin Albrecht-Hohmaier's and Kristin Herold's contribution demonstrates.[28]

But that's not my topic here because my title promises to deal with editions beyond the musical text. I'll return to that presently, but please allow me first to add some remarks on the *Beethovens Werkstatt* project,[29] because in this project there is really no 'edited text' in the strict sense. The final version of a work by Beethoven is completely out of scope there because the focus has been shifted to a close examination and description of the genesis or development of a work and the compositional strategies and methods of the composer as witnessed by his often barely legible manuscripts. And again, the MEI encoding here helps to realize presentations which facilitate the understanding of these processes. The encoding has been linked here to the individual shapes of entries in the manuscript (cf. Figure 4; this is realized through SVG, another XML format)[30] and, if desired, the encoding is rendered as human-readable musical text. This readable text in turn is linked via MEI to the entries in the document. The encoding thus allows different perspectives on the text: in the example of Beethoven's song "Neue Liebe, neues Leben" op. 75/2 (the third one in the so-called *VideApp* on the project's website) you find cleartext transcriptions of the different steps in the development of the final bars in Beethoven's song.[31] If you select in the menu of this visualization the entry "Invarianzanzeige", the software marks with colors those details which were taken over

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26 The example comes from no. 9 of *Der Freischütz*, bars 75-79; abbreviation marks in the upper strings and in the violoncellos in the upper example, written out in the example below.

27 Cf. online: https://mozarteum.at/digitale-mozart-edition/; meanwhile some examples of the digital-interactive Mozart edition have been published, cf. online: https://dme.mozarteum.at/movi/en, 07.01.2020.

28 Cf. Albrecht-Hohmaier/Herold, in this volume, pp. 733-753.

29 *Beethovens Werkstatt. Genetische Textkritik und Digitale Musikedition*, online: https://www.beethovens-werkstatt.de, 07.01.2020.

30 The example from the autograph of the second movement of the String Quartet op. 59/3 is published on the project website as prototype 2 (online: https://beethovens-werkstatt.de/prototyp-2-0/, 07.01.2020). A short explanation of SVG (Scalable Vector Graphics) is to be found in the technical glossary online: https://beethovens-werkstatt.de/glossary/svg/, 07.01.2020.

31 Cf. in the so called "Transkriptions-Ansicht" the states; online: http://nagano.upb.de:29999/472b29ec to http://nagano.upb.de:29999/0dd95eb4, 07.01.2020.

from versions before: by using these colors you are able to recognize in the last version which notes go back to the very first version Beethoven wrote down.

Figure 3: Freischütz Digital*, fragment from no. 9: Terzetto Agathe, Ännchen, Max: „Wie! Was! Entsetzen!", bars 74-79, vocal parts and upper strings; version 1 above: with abbreviation signs; version 2 below: with expanded abbreviations.*

Figure 4: Beethovens Werkstatt*, Case Study 2: detail from the autograph of his String Quartet op. 59/3, slow movement, bar 34, violin 1: an individual note of the violin is highlighted through SVG and directly connected to the MEI-encoding of this note (it is also possible to link it to the transcription of this passage).*
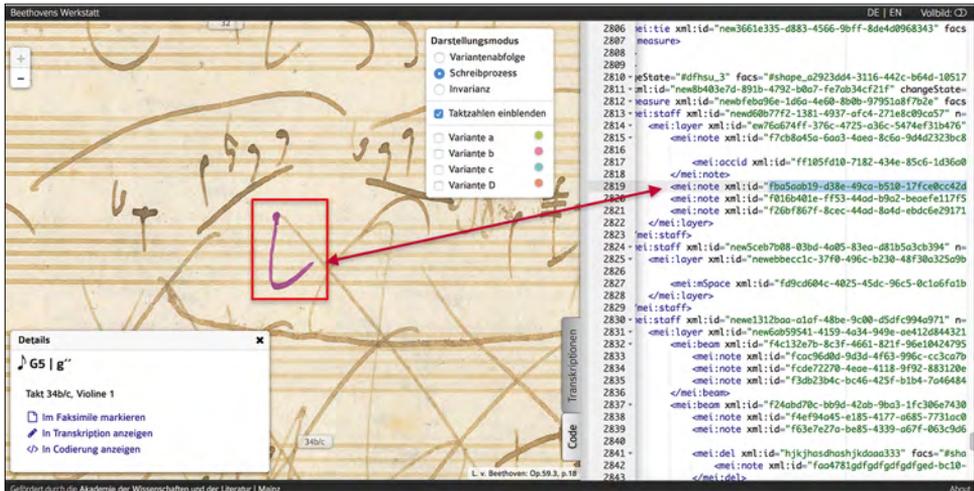
So, if I try to summarize the examples up to this point, I think it is very important to emphasize the central role of the MEI standard as a kind of controlling system in the middle of all the different views which I mentioned.[32] MEI is rendered as readable music notation by the mentioned *Verovio* library, it is connected to individual bars or even individual note entries in facsimiles via SVG, it is possible to produce MIDI sounds from MEI, and MEI helps to navigate in real sound or video recordings, and finally there is a close connection between MEI metadata or annotations to the TEI (Text Encoding Initiative) world. The second important topic is that all these mentioned things have something to do with internationally accepted standards (mostly based on XML), and these standards are one of the crucial prerequisites for the long-term availability of the results of our work and at the same time the base for interoperability. And if you want to handle the intertextual musical and textual references of the pasticcios in a project, you will find here a broad spectrum of possibilities for doing this. And again: I refer here to Martin Albrecht-Hohmaier's and Kristin Herold's text for more details concerning aspects of the music.

The last part of my own contribution here is devoted to the non-musical aspects of the pasticcio edition and thus moves from the MEI standard to the text encoding standard TEI. My aim here is to demonstrate for you, with a few examples from the Carl Maria von Weber text edition, the advantages of standards and authority files for this part of work which aims at an infrastructure which is able to connect these separate research results to music editing, and enables the editor to realize digital visualizations which

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32   Concerning this function of MEI cf. Richts/Veit, 2018, pp. 292-301.

combine scores, maps and biographical entries in order to make the circumstances of musical composition and performance transparent. *PASTICCIO* wants to introduce a further aspect: mobility – in order to contextualize the music horizontally and vertically, so the speak, by delivering data not only on singers and their repertoire, but also on their travels and other skills and connecting this with information about the modifications of the music which these singers used on their travels (musical arrangements, text changes, consideration of other local conditions etc.). A lot of work has already been carried out in research on music migrations in the *Musicisti europei* and the *Music Migrations* project,[33] and this work should be the point of departure for new and instructive combinations of the material which is already available or will be included in future work.

In the world of the Weber digital edition, 'persons' are regarded as the agents of all 'events' which we want to describe, and it is important that one could switch between the perspective of these different agents. The events point back to the persons involved, which is to say, each event has an originator or several originators. If, for example, Weber writes a letter to Friedrich Rochlitz, this is an act of correspondence, involving two persons, the sender and the receiver of the letter. In the case of the main person of our edition, we have a tab bar on our website with tabs concerning 'events' in a very general sense: biographical events, letter or article writing events, diary entries, composition of works, and even passive events like being mentioned in a bibliography. Weber as a person is, in a way, part of these events which in the individual files point back to the personal file for Weber. At the same time the receiver of an individual letter, in this case Friedrich Rochlitz, is dealt with according to the same principles – so that all 'events' pointing to his person are collected in the same tab system. Thus, when he is in the focus of our view, we can, for example, have a look at his correspondence (naturally only within the world of our editorial scope). The important point here is that we do not actively point from the person to the event (because that would result in the necessity of actively changing the biographical entries with each new finding), but the other way round: the events point to the persons, so each new event which we add and which has this person as an active or passive agent points to the person and is automatically added to this person's file. At the same time, we are able to automatically harvest electronic mentions of this person in contexts outside our own through the standard identifier in an

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33 Cf. *Musicisti Europei a Venezia, Roma e Napoli (1650-1750)*, online: http://www.musici.eu/index.php?id=44, 07.01.2020, and *Musica Migrans – Lebenslinien mittel- und osteuropäischer Musiker* as well as *Musica Migrans – Musikinstitutionen in Mittel- und Osteuropa*, online: www.musicamigrans.de/, 07.01.2020.

authority file like GND or VIAF.[34] Based on the GND Beacon technique articles referring to this GND can be added to our own information.[35]

Figure 5: Carl Maria von Weber Complete Edition, Online-Edition of the textual parts of his œuvre; diary entry of 1ˢᵗ May 1810 with links to some of the mentioned persons, letters, works and writings.
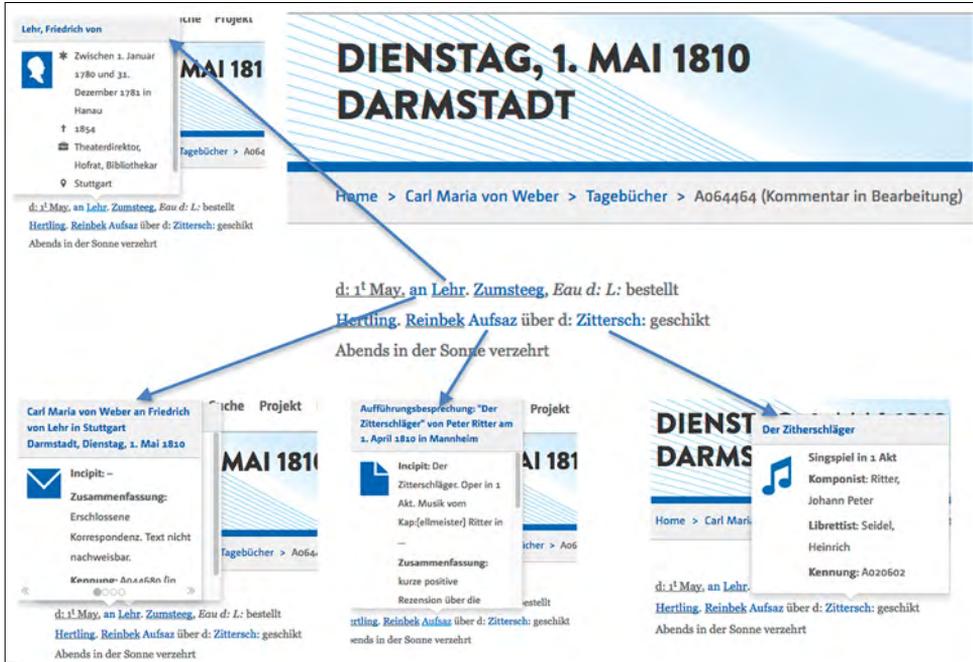
Another example from Weber's diary, which is given in Figure 5, shows the entry of 1 May 1810. In the first two lines of this entry we have a very dense documentation of events: Weber mentions several persons, the word "an" (to) means that he has written letters to these persons, and he mentions an article which he wrote on Peter Ritter's opera *Der Zitherschläger*. The word *Zittersch:* points to an entry about the work which is attributed to Peter Ritter. In the rendering there is a tab "Rückverweise" ("backlinks") which collects all mentions of this work (in this case nine). This is more interesting in the case of persons: in the article which Weber wrote, the singer Catharina Gervais is

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34 The "Gemeinsame Normdatei" (GND) deals with persons, organizations, localities, keywords etc. and is managed by the German National Library (cf. https://www.dnb.de/gnd/, 07.01.2020); the "Virtual International Authority File" (VIAF) combines multiple national name authority files into a single one (cf. online: https://viaf.org/, 07.01.2020).

35 Cf., e.g., in the case of Weber: online: https://weber-gesamtausgabe.de/de/A002068.html#bs-tab-gnd-beacon, 07.01.2020; concerning the Beacon format cf. online: https://meta.wikimedia.org/wiki/Dynamic_links_to_external_resources, 07.01.2020.

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mentioned – in this case we have 58 backlinks to our own database. At the moment we only refer to this singer within the edited texts by adding a <persName/> element and a key attribute. Thus, when we point from a locality (a town or a theater) back to the persons mentioned with special events occurring in this place, that leads in our case to a simple accumulation of mention marks and is not very informative. With a growing amount of mentions or annotations of any kind these links certainly should be classified in some way, e.g. with such categories as those employed in the *Music Migrations* mappings,[36] where, for example, a distinction is made between simple sojourns, real employments and training or schooling. There we even have the resolvable "Cluster of Markers" visualization, which clearly offers the fine possibility to avoid the uninformative accumulation of uniformly colored markers.

This is only one example of the urgent need for developing ontologies or *thesauri* for different forms of 'annotations' in the growing editorial universe. The narrative texts within digital 'editions' clearly are on a descending branch and are more and more replaced by individual annotations which are fixed directly to their reference point. Even if we have the means of 'linking' details – the huge amount of single topic annotations drowns the user in an ocean of information if there are no means to sort and connect these individual bits and bytes in a way that helps the user to find the answer for his or her individual question. Ontologies or controlled vocabularies for annotations and a classification of linking instructions might help to pave the way for a more useful presentation of our research results.[37]

When discussing annotation-processes with the Dvořák edition in Prague in the early phase of our *Edirom* software, there was a vote for a separate species of 'general' annotations besides the 'normal' ones in order to not completely loose interdependencies between these atomistic annotations. In our digital Weber text edition, we introduced so-called "thematic commentaries"[38] which summarize more complex events referred to in a lot of different edited texts, e.g. a text concerning the development of the German-speaking ensemble at the theater in Prague.[39] This is a return to a narrative which is fed from information which the editor found in the scattered texts of his edition. Through its embedded links this text is highly transparent but nevertheless it is still a sort of construction based on the database. If we want to avoid a huge proportion of construction we should endeavor to formalize as much of the information as possible – but at the same time this formalization has to be made completely transparent in order

36 Cf. the project *Music Migrations in the Early Modern Age* (online: http://www.musmig. eu/database/, 07.01.2020), where you can search for groups or individual musicians and from the biographical data go to "load map" in order to have a visualization with different markers for the different categories.

37 Cf. on this topic Hadjakos, 2017.

38 Online: https://weber-gesamtausgabe.de/de/Register/Themenkommentare, 07.01.2020 These commentaries are continually being expanded.

39 Online: https://weber-gesamtausgabe.de/de/A009005/Themenkommentare/A090005. html, 07.01.2020.

to avoid an apparent objectivity which in reality already depends on the decisions about which information enters your database and which is sorted out. For our digital editions beyond the musical text it is highly recommendable to search for new structures for semantically meaningful accumulations of data – these, at the same time will make it easier to interchange data and to build corpora beyond individual projects. And using internationally established encoding standards is the basic prerequisite in order to make this new information network possible.

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