EVALUATING A METHOD FOR THE ANALYSIS OF PERFORMANCE PRACTICES IN ELECTRONIC MUSIC

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ABSTRACT

This paper discusses the application of a method for the analysis of performance practices of electronic music that was developed by Ciciliani and originally presented in the paper "Towards an Aesthetic of Electronic Music Performance Practice" (Ciciliani 2014). This paper will provide a brief summary of this model in a form which was revised since its first presentation.

In the winter semester 2014/15 a group of approximately 60 students used this method for the analysis of five different performance situations. These examples included performances DJ QBert, Alexander Schubert/Frauke Aulbert, Nicolas Collins, Marco Donnarumma and Carl-Michael von Hausswolff. Altogether more than 180 analyses have been generated. The different results have been compared in detail in order to evaluate the functionality and usefulness of the analysis method. The outcome of this assessment is discussed in the paper.

KEYWORDS

Performance Practice, Interfaces, Electronic Music, Embodiment, Presence.

1. INTRODUCTION

This paper discusses the application of a method for the analysis of performance practices of electronic music that was developed by Ciciliani. A brief summary of the method will be presented, which mainly draws from the paper "Towards an Aesthetic of Electronic Music Performance Practice" (Ciciliani 2014), but which also introduces some revisions to this model.

In the winter semester 2014/15 a group of approximately 60 students used this method for the analysis of five different performance situations by the artists DJ QBert, Alexander Schubert/Frauke Aulbert, Nicolas Collins, Marco Donnarumma and Carl-Michael von Hausswolff. Altogether more than 180 analyses have been generated. The different results have subsequently been compared in detail in order to evaluate the functionality of the used method for analysis. The outcome of this assessment will be presented below.

2. A METHOD FOR THE ANALYSIS OF PERFORMANCE PRACTICES

The method which is presented in this paper attempts to identify performance practices of electronic music that have become established during the last decades. Thereby every performance is understood to be an audiovisual means of expression, which inevitably becomes part of the presented work in the moment it is performed in front of an audience. In the context of this discussion, performance is confined to settings in which one performer presents a work for an audience.

The method uses altogether 11 parameters that are graphically presented as a parametric space. It builds on previous publications by Birnbaum et al (2005) and Magnusson (2009). For a detailed description of the main parameters see Ciciliani (2014). The next chapter presents a short summary.

2.1. *CENTRIPETAL* AND *CENTRIFUGAL* FORCES IN PERFORMANCES

Eight parameters are arranged in two groups, while each group occupies one half of the parametric space. The two groups are referred to as the centripetal and the centrifugal parameters. The terms centripetal and centrifugal are describing models of performance that either guide the attention towards a central point in the space, which is usually the performer, or away from the center towards the boundaries of the space.

The *centripetal*-model is characterized by:

- a *centripetal* disposition, meaning that the performer is at the center of attention;
- visibility of performer;
- high transparency of bodily actions and sonic reactions;
- events that can be related to the physical actions of the performer;
- sound sources in the direction of the performer;
- correspondence of body and sound;

The *centrifugal*-model is characterized by:

- a *centrifugal* disposition; the performer functions as a controlling rather than enacting entity;
- the performer is in a rather hidden position;
- little or no correspondence between actions and sonic results;
- there are no obvious causal connections between the performer's actions and the occurring events;
- sound sources are decentralized and/or spread out;
- independence between the performer's body and sound; (Ciciliani 2014)

Examples of the centripetal model are the vast majority of traditional instruments. An example of the centrifugal model is the performance practice that is tightly associated with the Acousmonium.

2.2. THE PARAMETERS OF THE *CENTRIPETAL* GROUP

The four parameters belonging to the centripetal group are:

- body: is the performer's body clearly exposed and visible?
- *presence*: is the performer's presence prominent as part of the performance? In general, *presence* refers to a perception of the performer that is experienced as intense and auratic. While the perception of a performer's presence is tightly connected to the performer's body, the body does not necessarily have to be clearly visible. Therefore 'body' and 'presence' are treated as independent parameters.
- *embodiment*: is embodied knowledge evidently used as part of the performance? When playing traditional instruments embodied knowledge plays a significant role as it would be impossible to apply the necessary fine motor skills if all motions were consciously reflected (Kim 2010). In the given context embodiment takes place when there is a very intimate connection between the physical actions of the performer and the reaction of the technology.
- transparency: is there a strong readability between the performer's actions and the sonic result? Often, transparency is achieved by presenting a strong correlation between physical movements and their musical consequences. However, transparency can be heightened in many different ways, including the use of technology.

2.3. THE PARAMETERS OF THE *CENTRIFUGAL* GROUP

The following four parameters are part of the centrifugal group:

- space: this parameter indicates whether the sound sources are in the proximity of the performer, thus emphasizing his or her role in the performance, or are they are spread throughout the performance space, thereby directing the attention to the boundaries of the space, or even beyond.
- mediatization: are there sounds that occur independently of any actions on behalf of the performer, as for example in tape mu-

sic? This indicates that the sounds could have been produced at a different time and that the sound was played back during the performance.

- camouflage: this parameter is positioned at the opposite side of the aforementioned parameter 'transparency'. It indicates when active efforts have been taken in order to hide performance elements from the audience. Again, this is to some extent the case with acousmatic music, when the mixing board and the performer are positioned in the middle of the auditorium and thereby behind the people sitting in the first rows of the auditorium. As such camouflaging decisions are characteristic of certain types of performance practices it has been considered insufficient to merely indicate such instances by putting the 'transparency' parameter to its minimum value. Instead it is introduced as a separate parameter.
- degrees of freedom: this parameter indicates whether the chosen performance setup offers control on a large number of expressive parameters, or whether only very global aspects of the performance can be manipulated. As it is typical of traditional instruments to offer very nuanced control on many parameters, a high degree of freedom is considered to be characteristic of the centripetal model. Controlling the mix of a performed piece, as it is typical in acousmatic concerts, only offers minimal control on the timbre and no control on the timing. Therefore it is deemed characteristic for the centrifugal group that there is a rather low amount of degree of freedom.

As this parameter is part of the centrifugal group it has (somewhat counter-intuitively) been decided that a low degree of freedom is indicated by marking the parameter at its maximum value, and a high degree of freedom at its minimum value. This assures that the resulting overall shape that is made visible on the parametric space adequately indicates whether a particular performance tends to the centripetal or the centrifugal model.

2.4. A FLOATING PARAMETER INDICATING VISUAL MEDIA

Many performances include visual media, as for example video projections, specific uses of lighting or theatrical elements. If such media are utilized they can be added to the parametric space as a separate parametric axis. In order to differentiate it from the others, it is colored differently than the other parameters. Depending on the function and usage of the visual element, the parametric axis can be positioned in proximity to one of the other parameters.

For example, video projection is usually used in performances of live-coding, by displaying the code as it is being typed. In this case the projection strongly supports the 'transparency' aspect of the performance, as it shows in the most direct possible way, how the music is created. Even though the code may be cryptic for many audience members, the process is still made transparent (audience members also do not need to be familiar with the fingerings of woodwind instruments in

order to understand the performance of e.g. a bass-clarinetist). In this case it would therefore make sense to position the parameter for the visual medium close to the parameter 'transparency'.

On the other hand, performances by e.g. Ryoji Ikeda are usually accompanied by large video projections with entirely abstract material. In such an instance the projection is forming a new virtual space in addition to the performance area, thereby expanding it spatially. Therefore it might be argued that the parameter for visual media should be positioned in proximity to the parameter 'space'.

2.5. TWO SEPARATE PARAMETERS FOR *PREVIOUS KNOWLEDGE*

Two additional parameters have been introduced in order to indicate whether any sort of previous knowledge are required in order to be able to adequately apprehend the performance of a work. Hereby it is differentiated whether specific knowledge is required that is bound to a specific work or whether the acquaintance with a particular larger cultural practice is necessary.

These parameters are labeled "work specific knowledge required" and "cultural knowledge required". They are displayed on a separate axis apart from the aforementioned parametric space.

It is assumed that strongly embodied instruments do not require any previous knowledge as practically every person can emphatically co-experience and understand certain gestures or movements when they are performed by a musician. However, in order to comprehend the actions of e.g. a virtuosic DJ, a basic understanding of the workings of a record player and scratching techniques are necessary. This is a specific set of cultural knowledge which is presupposed.

An example for work specific knowledge is Alvin Lucier's *Music for a solo performer*, in which the performer is equipped with an EEG. When producing alpha waves in a state of relaxation various percussion instruments in the space are incited by transducers and motors (Lucier 1995:300). An audience member that is not familiar with the setup would only see a motionless performer sitting on a chair with some wires attached on the head. It is very likely that he or she would experience the piece very differently than somebody who is aware of the connection between the percussion instruments and the performer. Therefore this is an example for a work in which a relatively large amount of work specific knowledge is required.

Many works may require work specific as well as cultural knowledge. The two parameters therefore do not exclude each other.

Often it is difficult to decide where the threshold lies between general cultural knowledge and specific cultural knowledge. Is a basic familiarity with a violin general or already specific? And how about when smart phones or tablets are used for performances? What is general and specific cultural knowledge strongly depends on the demography of an audience (e.g. age and cultural background). In the context of

the analysis of a specific performance practice it might therefore be necessary to indicate to what cultural group a concrete value of this parameter refers.

2.6. DISTRIBUTION IN SPACE

Figure 1 shows the spatial arrangement of the parameters in the parametric space. The centripetal and centrifugal parameters are positioned on opposite sides. By placing points on every axis for a particular analysis and connecting those, a specific shape will result which will show in an intuitive way whether a particular performance practice tends to either the centrifugal or the centripetal models, or whether it is compound of a more heterogeneous combination of parameters.

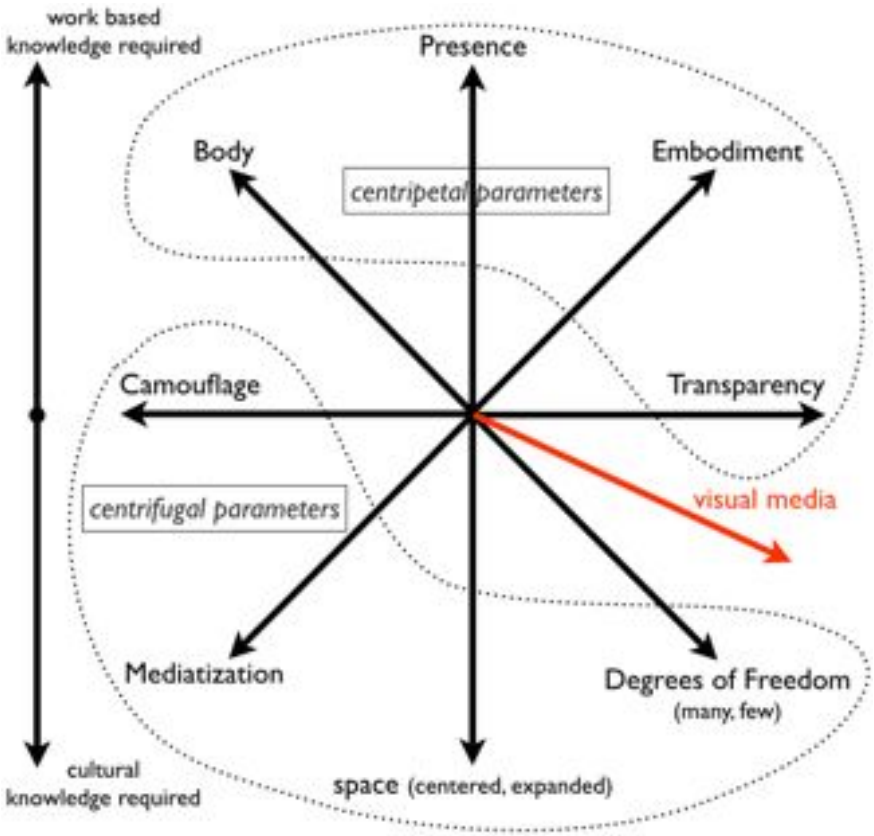

Figure 1 The spatial distribution of the parameters. Note that the visual media parameter can be pointed to any direction, depending on its function in a given context.

3. EVALUATION OF THE ANALYSIS METHOD

3.1. ASSIGNMENT FOR STUDENTS OF THE UNIVERSITY OF MUSIC AND PERFORMING ARTS GRAZ (KUG)

In the winter semester 2014/15 Marko Ciciliani offered a seminar on "Performance practice in electronic music" at the IEM – Institute of Electronic Music and Acoustics of the University of Music and Performing Arts Graz (KUG – Kunstuniversität Graz). A total of 61 students had to pick three from five examples of specific performance practices and

analyze them according to the described method. Apart from two master students in computer music composition, all other students were bachelor and master students of the sound engineering degree program. Most of the sound engineering students are not very familiar with experimental or post-avantgarde forms of music.

Apart from handing in the filled in parametric spaces the students were required to submit short comments explaining why they assigned a specific value to a particular parameter.

The five examples were all taken from YouTube, so the students could get an impression of the sound and the visual appearance of a performance. The examples were:

1. DJ Qbert *https://www.youtube.com/watch?v=w80uZaBK718* 0:30 to ca. 5:00
2. Alexander Schubert *https://www.youtube.com/watch?v=tjzSX3D1ak0* "Your Fox's a Dirty Gold", performed by Frauke Aulbert
3. Nicolas Collins *https://www.youtube.com/watch?v=89jbl0ZuaH4*
4. Marco Donnarumma *https://www.youtube.com/watch?v=kDWkDy3tyXM* "Hypo Chrysos"
5. Carl-Michael von Hausswolff *https://www.youtube.com/watch?v=C-flW_g9skR8*

Additional information was given for the examples by Schubert, Collins and Hausswolff:

With Schubert a brief explanation was given on the technical setup. In this example the singer wears two Wii controllers with Nunchucks that have been integrated in sweatbands that she is wearing on her wrists. An explanation of the technical setup was also given with the Collins example. In that performance Collins uses a trombone where the mouthpiece has been replaced by a loudspeaker as the only sound source. In addition, a small computer keyboard is attached to the slide, giving the performer control of live processes. The additional information for the Hausswolff example consisted of the remark that Hausswolff uses a surround setup for the sound projection. In this context it was also mentioned that stereo sound projections can be assumed for all other examples except for Collins', where the loudspeaker on the trombone is the only sound source.

3.2. EVALUATION OF ANALYSIS

For this evaluation the results of the students' analysis (presented graphically as the points on the axes) have been translated into numbers. This was necessary in order to make the results comparable and to create a set of statistics. For every parameter in each analysis number "0" represents the starting point of the axis in the center of the parametric space and "10" describes the maximum distance from the center. The distance of each point from the center has been measured as precisely as possible. Afterwards the numeric results have been transferred into several MSExcel diagrams for further analysis.

The different values for the parameters are described as following:

0 – 1.5	minimum value
1.5 – 3.5	low value
4 – 6	medium value
6.5 – 8	high value
8.5 – 10	maximum value

Apart from the average value, what has been of special interest is the variance amongst all students that occurred in the selection of values for a particular parameter.

3.2.1. EXAMPLE DJ QBERT

56 of the 61 students have chosen to analyse this piece, more than any of the other works.

	Ø value	maximum area	high area	medium area	low area	minimum area
Centripetal parameters						
body	8,92	39/70%[1]	12/21%	4/7%	1/2%	0/0%
presence	9,15	46/82%	6/11%	3/5%	1/2%	0/0%
embodiment	7,53	25/45%	15/27%	11/20%	3/5%	2/4%
transparency	7,93	29/52%	13/23%	7/13%	7/13%	0/0%
Centrifugal parameters						
space	0,94	2/4%	1/2%	2/4%	4/7%	47/84%
mediatization	5,24	8/14%	11/20%	26/46%	3/5%	8/14%
camouflage	1,11	1/2%	0/0%	8/14%	5/9%	42/75%
degrees of freedom	5,23	10/18%	12/21%	13/23%	15/27%	6/11%
visual media	0,11	1/2%	0/0%	0/0%	0/0%	55/98%
work based knowledge	0,65	1/2%	1/2%	1/2%	4/7%	49/88%
cultural knowledge	3,20	8/14%	3/5%	6/11%	20/36%	19/34%

Two of the centripetal parameters – *body* and *presence* – and two of the centrifugal parameters – *space* and *camouflage* – were the most unambiguous. The students have set the values for *body* in the maximum and high area, for presence mostly in the maximum area. In contrast, the values for *space* and *camouflage* were predominantly minimal. The values for *embodiment* and *transparency* were spread out more evenly, although the maximum values were most frequently selected. This is similar to the parameter *mediatization*, but here most values were selected in the medium area. The values concerning *degrees of freedom* showed the strongest ambiguity. The students spread the placements almost equally between the five main areas with a slight preference for

1. Number of students setting the values in the particular area / percentage of students (rounded by MSExcel); the values of high significance (21% and more) are marked in red, lower values of significance (up to 20%) are set in bold type.

medium values. The parameter *visual media* was of no importance in this piece, as no additional visual media are used in this performance.

Almost all students assigned very low values for *work based knowledge* but higher ones for *cultural knowledge*. The latter also showed a lot of variance. This is interesting in so far as it indicates that many students take the understanding of the techniques of record scratching for granted (meaning that they do not interpret this as a specific cultural knowledge), while others interpreted this differently.

When these values are mapped to the parametric space, the following graph results:

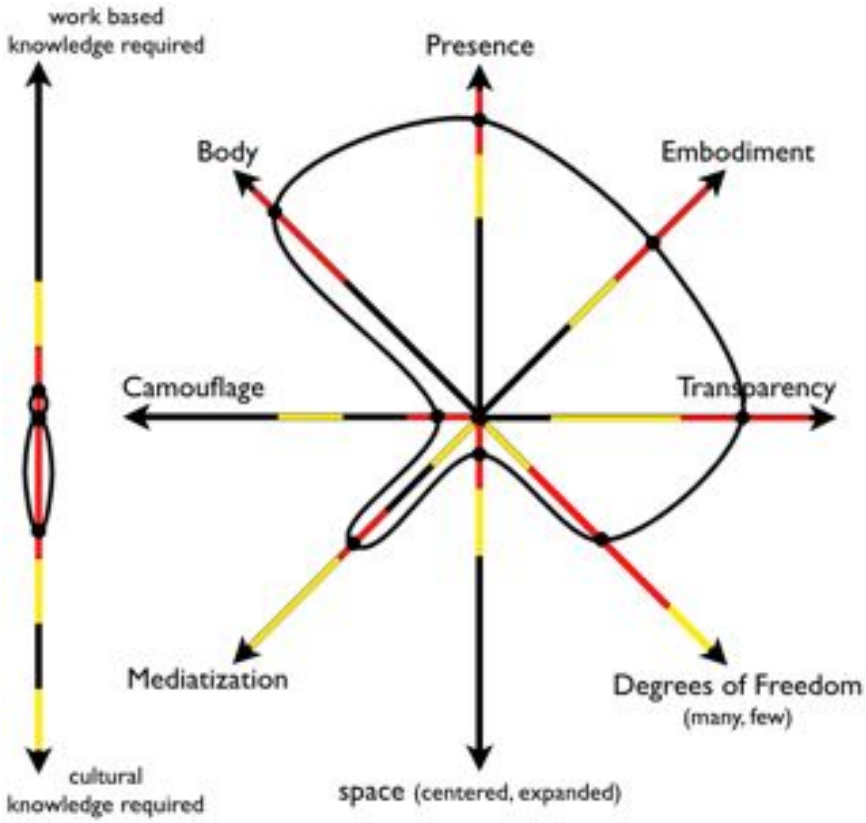

Figure 2 The average values for the DJ Qbert examples. The colors are indicating the variances: red – of main importance (21% and more), yellow – of notable significance (up to 20%)

3.2.2. ALEXANDER SCHUBERT

27 of the 61 students have chosen to analyse this piece.

	Ø value	maximum area	high area	medium area	low area	minimum area
Centripetal parameters						
body	9,57	23/85%	3/11%	1/4%	0/0%	0/0%
presence	9,67	25/93%	2/7%	0/0%	0/0%	0/0%
embodiment	7,35	14/52%	2/7%	9/33%	1/4%	1/4%
transparency	5,13	5/19%	5/19%	7/26%	7/26%	3/11%
Centrifugal parameters						
space	2,90	4/15%	1/4%	5/19%	3/11%	14/52%
mediatization	5,07	5/19%	5/19%	8/30%	3/11%	6/22%
camouflage	1,17	1/4%	1/4%	1/4%	3/11%	21/78%
degrees of freedom	3,78	1/4%	4/15%	8/30%	7/26%	7 /26%
visual media	3,92	5/19%	0/0%	11/41%	2/7%	9/33%
work based knowledge	4,22	2/7%	1/4%	13/48%	7/26%	4/15%
cultural knowledge	0,92	1/4%	1/4%	1/4%	1/4%	23/85%

Similar to the preceding example, the parameters *body*, *presence* and *camouflage* were the most unambiguous. The majority of the students set the values for the first two parameters in the maximum area, for *camouflage* at its minimum. In comparison, the values for *space* and *embodiment* were more evenly spread throughout different areas. However, the values for *embodiment* were once again in the medium area and higher. The highest variability was to be found in the interpretation of *transparency*, *mediatisation* and *degrees of freedom*. The placements of values for these parameters were set in all five main areas.

Most students indicated that no *cultural knowledge* was necessary but that to a certain degree *work based knowledge* would be useful. Although no specific visual media were used in this piece, some students interpreted the use of changing lighting as audiovisual design. However, it was impossible to include the axis for *visual media* in the following parametric space presentation, because its direction has greatly varied across the different results (mostly, though, in the *centripetal* half of the space).

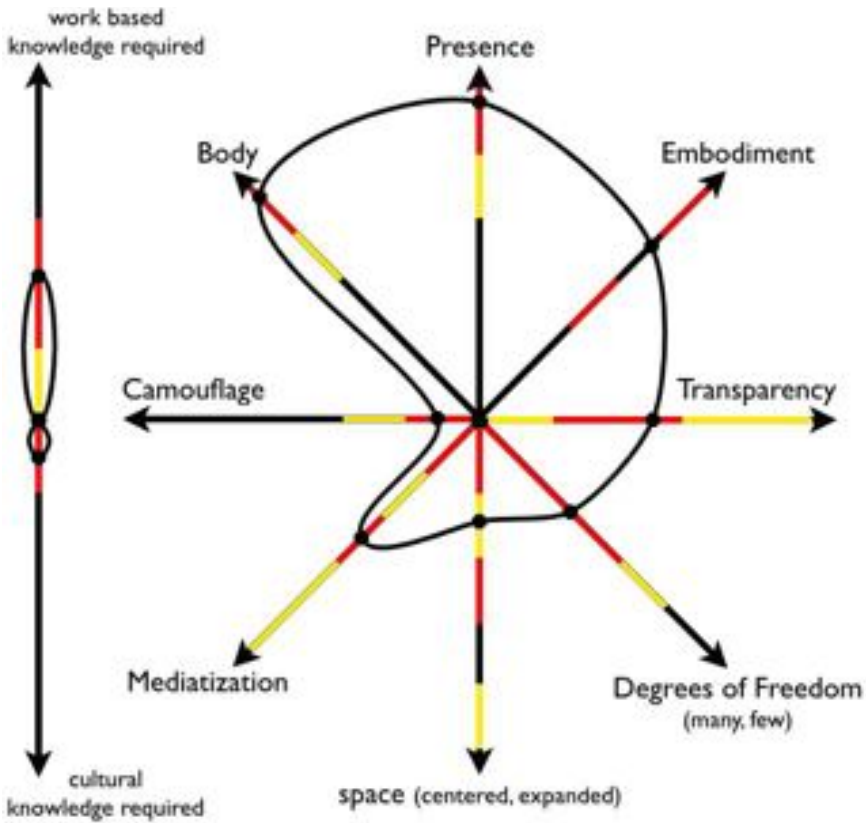

Figure 3 The average values for the example of Alexander Schubert

3.2.3. NICOLAS COLLINS

36 of the 61 students have chosen to analyse this piece.

	Ø value	maximum area	high area	medium area	low area	minimum area
Centripetal parameters						
body	9,64	34/94%	0/0%	2/6%	0/0 %	0/0%
presence	8,99	27/75%	6/17%	3/8%	0/0 %	0/0%
embodiment	6,11	8/22%	9/25%	12/33%	5/14 %	2/6%
transparency	5,86	8/22%	6/17%	15/42%	6/17%	1/3%
Centrifugal parameters						
space	2,80	6/17%	2/6%	3/8%	3/8%	22/61%
mediatization	3,97	4/11%	4/11%	8/22%	13/36%	7/19%
camouflage	0,82	0/0%	0/0%	4/11%	4/11%	28/78%
degrees of freedom	4,90	4/11%	9/25%	9/25%	7/19%	7/19%
visual media	0	36/100%	0/0%	0/0%	0/0%	0/0%
work based knowledge	3,69	4/11%	7/19%	4/11%	11/31%	10/28%
cultural knowledge	1,83	2/6%	1/3%	3/8%	9/25%	21/58%

As in the previous examples, the values for the parameters *body* and *presence*, *space* and *camouflage* showed once again the least variability. However, the values for *embodiment*, *transparency*, *mediatisation* and *degrees of freedom* showed a high degree of volatility. No visual media were used.

Most of the students indicated the necessity of some *work based knowledge* but only a minority the need for *cultural knowledge*.

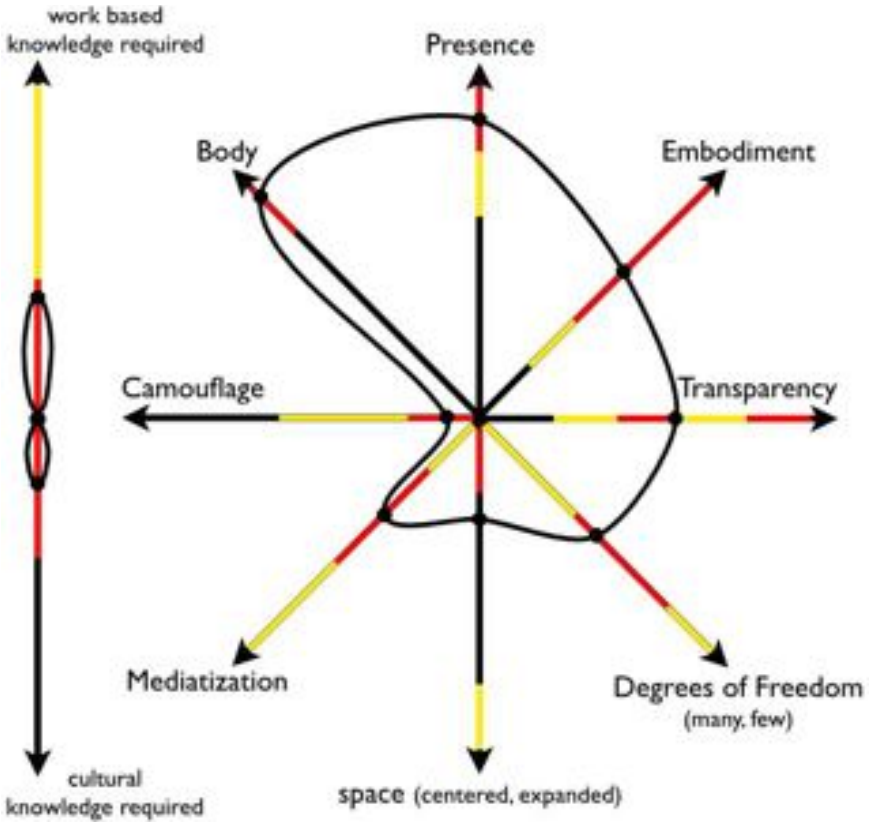

Figure 4 The average values for the example of Nic Collins

3.2.4. MARCO DONNARUMMA

32 of the 61 students have chosen to analyse this piece.

	Ø value	maximum area	high area	medium area	low area	minimum area
Centripetal parameters						
body	9,28	26/81%	3/9%	3/9%	0/0 %	0/0%
presence	9,26	28/88%	1/3%	3/9%	0/0 %	0/0%
embodiment	7,19	15/47%	7/22%	5/16%	1/3%	4/13%
transparency	4,25	4/13%	4/13%	10/31%	4/22%	7/22%
Centrifugal parameters						
space	3,06	5/16%	2/6%	4/13%	4/13%	17/53%
mediatization	4,10	5/16%	3/9%	10/31%	3/9%	11/34%
camouflage	2,06	1/3%	2/6%	6/19%	3/9%	20/63%
degrees of freedom	6,77	10/31%	12/38%	5/16%	2/6%	3/9%
visual media	7,81	16/50%	5/16%	11/34%	0/0%	0/0%
work based knowledge	6,24	12/38%	4/13%	8/25%	3/9%	5/16%
cultural knowledge	0,41	0/0%	0/0%	1/3%	1/3%	30/94%

The values for the various parameters are slightly different than in the preceding examples but the main tendencies regarding the volatilities are similar: *body*, *presence* and *camouflage* are the unambiguous parameters, while the distribution of values for *embodiment*, *transparency*, *mediatization* and *degrees of freedom* is widely spread across the value regions. As this is an explicit audiovisual work the parameter *visual media* is important. However, the direction into which this parameter was pointed varied again to such a large amount that it was impossible to display the result in the graph.

Practically all students agreed that no *cultural knowledge* was required, while the need for *work based knowledge* showed a large degree of variability.

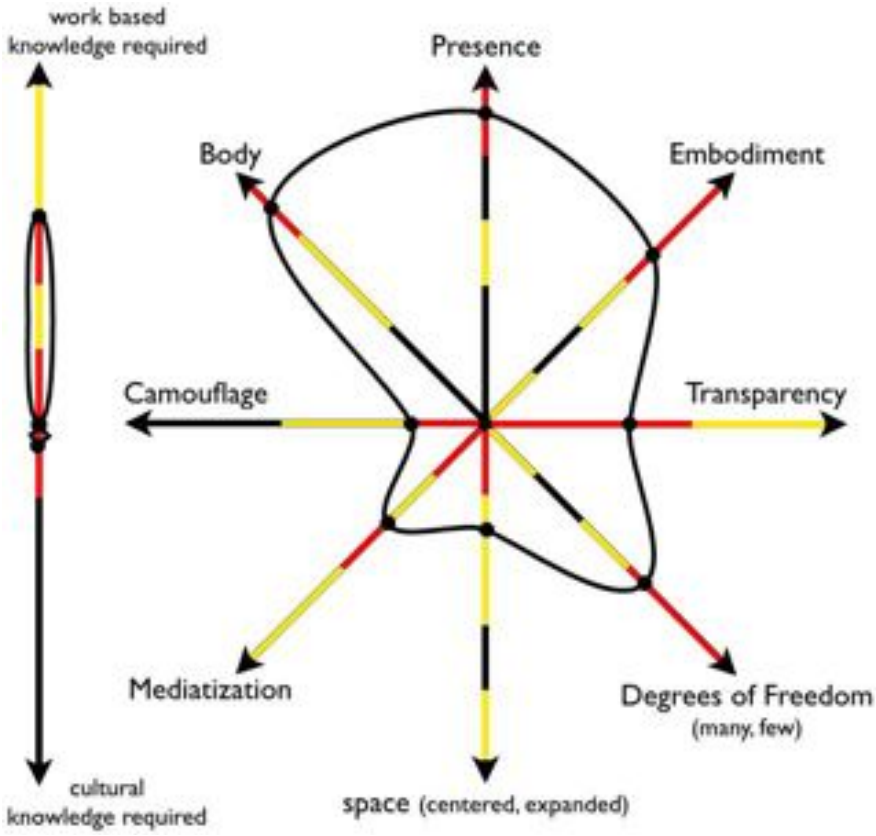

Figure 5 The average values for the example of Marco Donnarumma

3.2.5. CARL-MICHAEL VON HAUSSWOLFF

34 of 61 students have chosen to analyse this piece.

	Ø value	maximum area	high area	medium area	low area	minimum area
Centripetal parameters						
body	3,20	1/3%	2/6%	13/38%	5/15%	13/38%
presence	4,01	5/15%	4/12%	6/18%	11/32%	8/24%
embodiment	0,48	0/0%	0/0%	0/0%	5/15%	29/85%
transparency	0,81	1/3%	1/3%	1/3%	1/3%	30/88%
Centrifugal parameters						
space	7,84	24/71%	1/3%	3/9%	0/0%	6/18%
mediatization	7,66	22/65%	4/12%	4/12%	0/0%	4/12%
camouflage	7,97	20/59%	7/21%	5/15%	1/3%	1/3%
degrees of freedom	9,94	17/50%	3/9%	7/21%	4/12%	3/9%
visual media	6,70	11/33%	10/30%	7/21%	2/6%	3/9%
work based knowledge	1,51	1/3%	3/9%	3/9%	1/3%	25/76%
cultural knowledge	2,26	5/15%	1/3%	2/6%	2/6%	23/70%

In this example the centrifugal parameters are much more pronounced than the centripetal ones – all of their average values are in the high area. Interestingly, unlike in the other examples there is much ambiguity in the parameters *body*, *presence* and *camouflage*. In contrast, most of the students agreed on the values for *embodiment* and *transparency* in the same area (minimum). The values for *mediatization* and *degrees of freedom* are rather spread out evenly but with a clear preference for the maximum area.

Most of the students have indicated no or only very little need for *work based knowledge* and *cultural knowledge*. In this example *visual media* is an interesting example. Although Carl-Michael von Hausswolff uses only static red lighting that is pointed at the audience – thereby blinding it, the students have mostly been aware of its high importance for the perception of the work. However, their opinions in this matter have again differed strongly regarding the value and direction that they assigned to it.

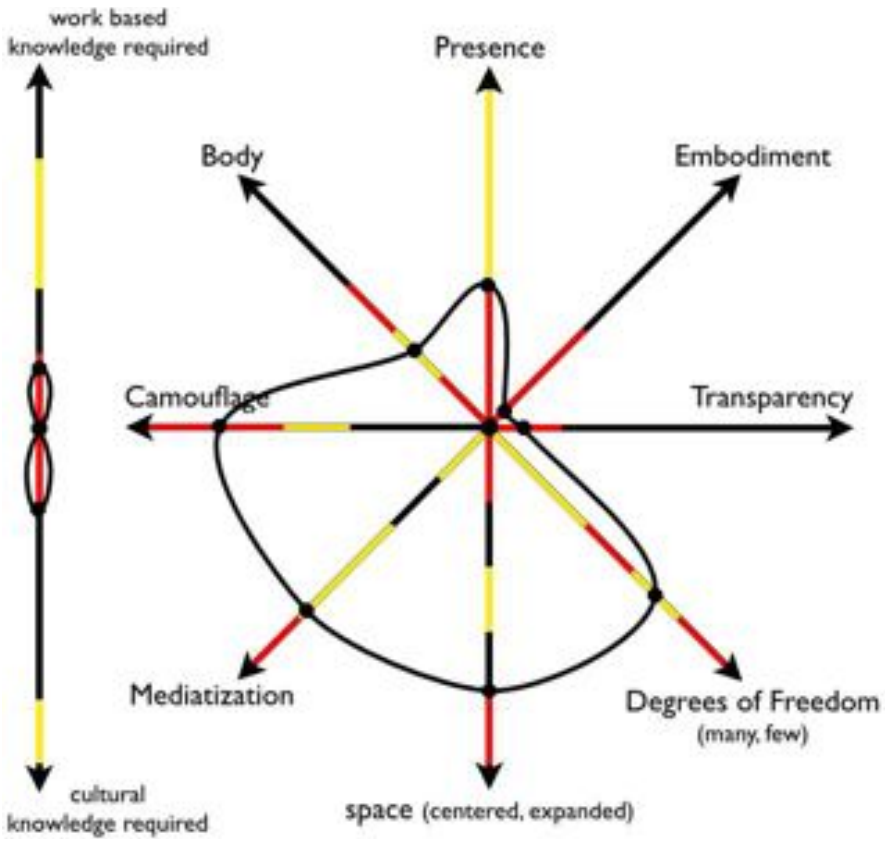

Figure 6 The average values for the example of Carl-Michael von Hausswolff

3.2.6. CONCLUSION

The set of parameters trying to identify performance practices of electronic music, together with the depiction of the final results in a shape in a parametric space, turns out to be a useful tool. Although the usefulness of some of the parameters might not be obvious when reading their description (for example the need for *transparency* and camouflage) they turn out to complement each other well when applied to a concrete performance situation. The parametric space makes it possible to see all the results at once, understand and compare them in an almost intuitive way.

The students' results show, though, a significant amount of volatility with some parameters. In four of the five examples the parameters *embodiment*, *transparency*, *mediatisation* and *degrees of freedom* have been interpreted in different ways. In contrast, in the same examples the parameters *body*, *presence*, *space* and *camouflage* were interpreted with very little variance. However, it is interesting to note that in the last example (von Hausswolff) these tendencies were almost reversed. This might have to be analyzed in much greater detail, but a possible explanation would be that depending on the chosen example, certain parameters are more obvious than others. Although the first four examples were quite different, they were all focussed on one performer who was clearly visible and highly active (centripetal tendencies) while the last one was the only one where the performer was hidden

and the sound spread out (centrifugal tendencies). If this explanation is correct, this would mean that it is not because of the general nature of a particular parameter that it shows more volatility, but that the greater variance mirrors a particular character of the analysed example.

The additional parameters *work based knowledge* and *cultural knowledge* also showed a high degree of variance. The question, if a particular example required a certain sort of previous knowledge was apparently answered in a very subjective manner. The parameter of *visual media* can be very useful in a case of a single depiction of a parametric space. However, in a statistic evaluation as this one it proved impossible to include it in the final graphs.

4. FURTHER RESEARCH

The different shapes that result with the described method help to compare different performance practices with each other. However, when large amounts of models would be compared, it would be helpful to have a quantified value that could express a specific character of a performance practice. It will be investigated whether the results of all parameters of a single performance could be summarized in a single numeric vector, which could then more easily be compared with other performance practices. In this way a larger database of analyses could be collected over time, where groups of performance practices could be compared with each other based on their numeric 'tags'.

Related to a different field, it would be interesting to investigate in how far the selected values of the parameters differ with the cultural background of the person using the model. There is reason to believe that especially the parameters that indicate different degrees of required previous knowledge might strongly depend on the user's personal familiarity with a specific style of performance. Furthermore, already with the discussed analyses of the students it is noticeable that they estimated the values for e.g. *transparency* higher with performance practices that they are familiar with (in this case DJ Qbert) than others that were outside the style of music they usually consume (e.g. Nic Collins). Judging from the style of performance or the used technology it is not obvious why DJ Qbert's performance would be significantly more transparent than Nic Collins'.

5. SUMMARY

The results of the students' analysis show the usefulness of the proposed analysis method. The resulting shapes in the parametric field offer an intuitive way to compare the different performance practices with each other. Thereby it offers the possibility to better assess its aesthetic value and its effect in conjunction with a specific musical or audiovisual work.

The results of some of the parameters show a high degree of volatility, while other are more consistent. It will require the analysis of a larg-

er number of works in order to find out whether certain parameters generally tend to be interpreted with much variance or whether this depends on the analyzed example of performance practice. But even if the former turns out to be the case this does not necessarily indicate a weakness of the particular parameter. It is also possible that certain parameters again require a larger expertise in order to evaluate them accurately, which – by itself – is no indication of the uselessness of a particular parameter.

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