

# Meanings of Spatial Formation in Recorded Sound

Emil Kraugerud

## Abstract

*This paper investigates the importance of forming the virtual space in recorded music. With a production-analytical model called the sound-space I seek to draw attention to the ways in which spatiality in recorded sound affects interpretation of meaning in music. The sound-space comprises both the four-dimensional spatiotemporal organization of previous models for sound analysis, and the ways in which that organization emphasizes meanings in recorded music. In order to demonstrate how the sound-space can be applied in production I have recorded and mixed a song and compared it to a previous version that was produced before the work on the sound-space concept started.*

## Keywords

Record production, spatiality, popular music, virtual space, stereo image.

## Introduction

This paper derives from a master's thesis on the meanings of spatiality in recorded sound. The thesis concerns the importance of forming the virtual space in recorded popular music, and it sheds light on the ways in which spatial formation affects interpretation of meaning in recorded songs. In this paper I will concentrate on what I call the *sound-space*, which is a production-analytical model that comprises both the four-dimensional spatiotemporal organization of previous models for sound analysis and the ways in which that organization evokes or emphasizes meanings in the recorded music.

Different concepts of recorded spatiality (Brøvig-Hanssen & Danielsen: 2013; Danielsen: 1993; Gibson: 1997 [revised 2005]; Moore: 1993 [revised 2001]; Moylan: 1992 [revised 2015]) suggest that sound-sources in a recording can be heard as located in a virtual space and that each sound-source is constituted by spatial properties. Furthermore, understanding the possible transtextual meanings of spatiality can help to elucidate the connection between recorded spaces and listeners' previous experiences of spatial properties (both in real spaces and in different recorded spaces). Accordingly, transtextual interpretation of recorded spaces can open for understanding the ways in which recorded spatiality affects a song's meaning. Approaching this from a production point of view, I will argue that practical applications of the sound-space as a tool for record production can contribute to increased awareness of how producers and engineers work in terms of spatiality.

The first part of this paper concerns the transtextuality of recorded spatiality. This will include a discussion of some previous approaches to understanding spatiality in popular music sound, seen in light of record production. Further on, I will address the concepts of *sonic markers* and transtextuality, and discuss how these can contribute to an understanding of how spatial formation affects meaning in recorded sound. In the second part of this paper, I will demonstrate how producers and engineers can affect the resulting narratives of their productions by employing of the sound-space as a production-analytical tool. Through analyses of excerpts from two different recordings of the same song, I will investigate how the different approaches to forming recorded spatiality affect the interpretation of meaning in the songs.

## **Spatial interpretations of recorded sound**

In the following sections the theoretical framework for this paper will be discussed, starting with Anne Danielsen and Allan F. Moore's different concepts of spatiality in stereophonic recordings. I will also discuss three other spatial approaches to record production: William

Moylan's *sound stage* (2015), Lelio Camilleri's *sonic space* (2010), and David Gibson's visual guide to recording, engineering and production (2005). Further on, I will turn to the possible narratives of recorded spaces, through Serge Lacasse's use of transtextuality (2000a), as well as Eirik Askerøi's sonic markers (2013).

Moore introduces the *sound-box* in *Rock: The Primary Text* (2001) to grasp what he calls *texture* in recorded music, a term referring to “the presence of and relationships between identifiable strands of sound in a music” (Moore: 2001, p. 121). In other words, texture describes the relationships between different sounds in a recording. Moore defines the sound-box as “a ‘virtual textural space’, envisaged as an empty cube of finite dimensions, changing with respect to real time (almost like an abstract, three-dimensional television screen)” (ibid.). In an updated discussion of the model in *Song Means* (2012), he addresses the *tactility* of sound in a recording, suggesting that a recording, in addition to being “made up of instruments playing melodies, rhythms and harmonies”, also carries a “feel” (Moore: 2012, p. 29). Moore further comments that “[i]t is this feel that is frequently the first aspect to attract (or repel) a listener, but it is also often the hardest to discuss” (ibid.). The sound-box is meant to conceptualize this, suggesting a “feeling” of the recorded space.

With the sound-box, Moore organizes the texture of sound in a model based on three spatial dimensions (depth, width and height) in addition to time:

All rock has strands at different vertical locations, where this represents their register. Most rock also attempts a sense of musical ‘depth’ (the illusory sense that some sounds originate at a greater distance than others), giving a sense of textural foreground, middleground and background. Much rock also has a sense of horizontal location, provided by the construction of the stereo image (Moore: 2001, p. 121).

The model is thus closely related to the dimensions of actual enclosed spaces, which is also the case of Danielsen's *sound-room* (“lydrom”; 1993). Danielsen's model similarly takes a three-dimensional approach to analyzing popular music sound. Both Danielsen's and Moore's

models can be regarded as abstract, as they relate to metaphors of space which are not actually inherent in musical sound (with the possible exception of width, a feature resulting from the physical placement of the two speakers of a stereo system). Both models are also based on the listener's previous experiences with actual spaces. Brøvig-Hanssen and Danielsen (2013) relate the sound-room to Denis Smalley's theory of *source-bonding* and James J. Gibson's theory of *ecological perception*, suggesting that "to make sense of the virtual space projected by a given popular music sound, we unconsciously compare it to previous experiences with *actual* spatial environments" (Brøvig-Hanssen & Danielsen: 2013, p. 71, emphasis original). Furthermore, they link the sound-room to Smalley's idea of sound as "space-form", described by Brøvig-Hanssen and Danielsen as "the aesthetically created spatial environment" (ibid.).

In her original presentation of the sound-room, Danielsen aims to grasp what she calls "the fragmented soundscape" (Danielsen: 1993, p. 51). As she explains, the term *sound* gathers a musical work into a sonic unity. The sound-room, on the other hand, aims to separate the music, allowing a focus on the different processes that happen *within* a sound (ibid., p. 52). Brøvig-Hanssen and Danielsen's discussion of Moore's sound-box further clarifies the difference between the two approaches:

What is clear is that the sound box is not a description of the virtual sonic space per se but a music-analytical tool that can be used as a matrix to map the spatial placement of the different elements of a mix (Brøvig-Hanssen & Danielsen: 2016, p. 24).

This aspect of the model is emphasized in Dockwray and Moore's analyses (2010), where the sound-box is used to identify different mix configurations in early stereophonic popular music recordings. Their illustrations of the sound-box, which are similar to Moore's illustrations in *Song Means* (2012), show a rectangular cuboid with constant dimensions in which pictures of different instruments are placed based on where they are perceived to emanate from.

Danielsen's sound-room, on the other hand, is, as mentioned, an attempt to capture internal processes within the sound that became possible with the advent of digital recording technologies in the 1980's and 1990's. Brøvig-Hanssen and Danielsen's illustrations exemplify this by varying the external dimensions of each sound-room, even within songs, to reflect the perceived overall depth, height and width of a song.

Sound-box and sound-room prove to be rather limited models for analysis, as they deal only with the spatial formation of recorded sound. However, both models shed light on an important aspect of popular music, and they can be good bases for a spatial approach to record production. The incorporation of aspects from both models into a new approach can for example include both internal and external aspects of recorded spatiality. This would elicit the ways in which a sound interacts with other sounds as well as how it acts by itself, meaning that both the perceived global space of a sound and the different local spaces within a sound would have been taken into account. Perception of the spatial properties of popular music sound is determined by the interaction between the internal and external aspects of the recorded space.

### **Other approaches to spatiality**

There are several examples of spatial approaches to record production. The two approaches discussed above both take a listener's point of view, being aimed at use in music analysis. Other approaches take the view of the producer to a greater extent, which is the case of Moylan's *sound stage*, described in *Understanding and Crafting the Mix* (2015). It is a two-dimensional model in which the listener is placed in front of a perceived stage floor with perceived width and depth, encompassing "the area within which all sound sources are perceived as being located" (Moylan: 2015, p. 52). The two spatial dimensions of the sound stage allow for recognizing stereo location, depth and proximity, but not verticality.

In the case of width, Moylan applies the term *phantom images*, to describe how various sound-sources can have different perceived widths (ibid., p. 53). According to Moylan, “[p]hantom images are sound sources that are perceived to be sounding at locations where a physical sound source does not exist” (ibid.). This includes sounds emerging from between the two stereo speakers and even beyond the speaker array. Moylan divides the notion of phantom images into *spread images* and *point source images* to distinguish between sounds that have some perceived width, extending between two audible boundaries (spread images), and sounds that can be pinpointed to a specific point in the stereo field (point source images) (ibid., p. 53-54).

Another approach to understanding the spatiality of recorded sound is Camilleri’s term *sonic space*, which is addressed by Moore in *Song Means* (2012). Camilleri further divides the term into three different spaces: *localized space*, *spectral space* and *morphological space* (Moore: 2012, p. 37). Moore explains how these different spaces constitute the sonic space:

“Localized space” is, effectively, the sort of space I have already been describing [sound-box]. “Spectral space” is to do with timbre [...] – it is here that we recognize the degree of saturation within a particular part of the soundbox. What Camilleri terms “morphological space” is the sensation of change we experience as timbres subtly alter, a factor also of the register in which different instruments are playing (ibid.).

Camilleri adds thus two dimensions to the notion of localization. The spectral space, recognizing timbre and saturation can be linked to Francis Rumsey’s scene-based approach, also discussed by Moore. According to Moore, Rumsey offers “a different way to think about notions of saturation” (ibid.). Saturation can for example be related to the changing timbre of a sound as the sound’s distance is increased. Notably, Rumsey also differs between the distance and the depth of sounds: “*distance* is the distance between the ‘front’ of a sound-source and a listener, while *depth* acknowledges that there can be a ‘back’ to that sound-source, and the difference between front and back delivers depth” (Rumsey referred to in

ibid.). In this way, Rumsey acknowledges that sounds have their own perceived depths, just as Moylan acknowledges the width of individual sounds. The last dimension of the sonic space – the morphological space – is related to the changing of timbres during a recording. As Moore points out, this factor is also affected by pitch register (ibid.).

The visuals presented in Gibson's *The Art of Mixing* (2005) encompass many of the parameters discussed above. Primarily a tool for helping aspiring mixing engineers become better, the illustrations display a transparent cuboid with loudspeakers placed to the fore of the top corners. Sound-sources are represented by circular or elliptical shapes of varying size according to the perceived size of the sound. Depth is indicated by shadows below the shapes. To further identify each sound-source, the shapes are tagged with the name of the instrument (guitar, bass, 808 kick, etc.). These visuals illustrate Moylan and Rumsey's suggestions that sounds can occupy varying amounts of space across all dimensions, while simultaneously including the perceived position of sounds. However, Moylan's point that sounds can be perceived to emanate from beyond the loudspeaker array is not taken into account. Furthermore, all of the illustrations depict recorded spaces of unvaried size, much like Moore's sound-box illustrations. For an educational tool, setting the outer dimensions according to maximum stereo panning and frequency range might be helpful, but it does not fully represent the recorded space the way it is perceived by the listener.

Apart from Moylan's and Gibson's models, all of the approaches to a spatial thinking of recorded sound reviewed above seem to take a primarily analytical approach. This raises the question of why and how analytical concepts such as sound-room and sound-box can be adequate bases for a new approach to record production. As Moore points out, the sound-box is meant to privilege "the listening, rather than the production, process" (Moore: 2001, p. 121). Sound-box is here opposed to the "mix", which concerns the production process (ibid.).

The use of an analytical listener-oriented approach can, however, allow for understanding the producer as a listener, that is, a critical listener who interacts with the music through reflection and association (making decisions in the production process based on this listening). As I will discuss below, critical listening is not necessarily only related to technical decisions, for instance how different tools should be used to make the sound better. It can also be related to what the results of these technical decisions have to say for the subjective listener. In other words, how the formation of the recorded space affects the listener.

The approaches discussed above consider the various ways in which recorded spaces are formed. What they do not explore to any considerable extent is how the formation of a recorded space affects the meaning of a song. Although spatiality in itself can be said to have some sort of implicit meaning, its potential for affecting the interpretation of a song needs to be further emphasized. This is particularly relevant in production contexts, to comprehend the role of producers and engineers in the forming of a recording. In what follows, I will address a few different theories that will shed light on how meaning is formed in recorded music. These theories will, when combined with the previously discussed notion of spatiality, form the foundation for my notion of the sound-space. The use of that term is meant to reflect the many types of space that can appear in a recording. (Sound-)“box” and (sound-)“room” are limited to specific sorts of enclosed space. On the other hand, a (“sound”)-space can be any thing from an open, vast field, to the inside of a shower enclosure.

### **Transtextual relations**

As a bridge between recorded sound and the possible associations to it I will employ the term *transtextuality*. Lacasse applies the term based on literary theorist Gérard Genette’s work, to refer to “the ensemble of any type of relation, explicit or not, that may link a text with others” (Lacasse: 2000a, p. 148). This is, according to Lacasse, what is often meant by *intertextuality*, but in Genette’s (and consequently Lacasse’s) use, *intertextuality* is a subcategory of



transtextuality, identifying “a relationship of copresence between two texts or among several texts: that is to say, eidetically and typically as the actual presence of one text within another” (Genette quoted in *ibid.*). In the case of recorded music intertextuality refers to practices such as quotation and allusion (*ibid.*, p. 150ff), and not the more vague transtextual relations such as appropriations of musical styles or extra-musical meanings. I will use the term transtextuality as a universal term to describe any of the different subcategories of transtextuality.

The use of transtextuality in this context requires an understanding of the recorded space as text. According to Moore (2007), a text is anything that can be read or interpreted (Moore: 2007, p. xi). This expands the definition beyond the realm of literature. Moore further suggests that,

[t]his also implies a degree of involvement with the experiencing of a musical text which, also, may not be part of the explicit experience of many listeners, but is normally part of the implicit experience [...]. The interpretation does not need to be conscious, nor does it need to be involved, but is something that we are inevitably engaged in (*ibid.*).

Accordingly, “text” can be regarded as a collective term for anything that is subject to interpretation, including musical parameters like melody, rhythm, timbre and sound. As such, even the recorded space can be interpreted as a text, since it can be compared to the real spaces we have experienced (heard) and our associations to these spaces.

For transtextuality to be relevant, it is required that the listener is familiar with the text that is being referred to. In the context of record production, then, transtextuality requires an “agreement” between the listening producer and the listener (consumer). Such an understanding is possible because a producer usually produces music that fits into a cultural network with which the listener is familiar. And although transtextual meanings to a large

extent should be regarded as subjective, they can still be familiar to a large group of people and can therefore be intersubjective.

### **Sonic markers**

Elaborating further on the possible transtextual functions of recorded spaces, I will now turn to the concept of *sonic markers*. Sonic markers are, according to Askerøi, “musical codes that have been historically grounded through a specific context, and that, through their appropriation, serve a range of narrative purposes in recorded music” (Askerøi: 2013, p. 16). Sonic markers can be seen in context with Camilleri’s concept of *sonicprints* (2010), which describe the specific sonic qualities that characterize a recording (“sonic fingerprints”). However, the concept of sonic markers emphasizes the outcome of the processes of appropriation and recontextualization of musical codes. Sonic markers can in this way supplement transtextuality as a way of understanding origin and meaning in recorded sound.

Sonic markers can refer to several types of narratives, including those of place, politics, musical style, and time. The application of sonic markers as a part of the recorded space and the recontextualization of these can link the recorded space to an array of contextual meanings. Relevant to the discussion of transtextuality is the appropriation of sonic markers into new texts, like when a sound or feature (for example a type of space) previously established as a sonic marker is simulated. Askerøi argues that “sonic markers are constructed thanks to different forms of appropriation or recontextualization of musical codes” (Askerøi: 2013, p. 139). In other words, musical codes gradually achieve their meaning as sonic markers when they are repeatedly transtextually referred to with the same purpose.

In the case of spatiality, sonic markers can for example be the spatial arrangement or the internal spatial features of an instrument. An example of the former is the use of what Dockwray and Moore (2010) call *triangular mix configurations*, a feature that occurs in many of the label Daptone’s records. A triangular mix is a sound-box where snare drum, bass guitar

and lead vocals form a triangular configuration through their frequency content and stereo placement (Dockwray & Moore: 2010, p. 186). In the music of one of Daptone's most popular acts, Sharon Jones & The Dap Kings, triangular mix configurations are used actively to evoke the sound of 1960s soul and RnB. On their album *Give the People What They Want* (2014) most of the songs are mixed with bass and drums on opposite sides, and with lead vocals (sometimes also backing vocals) centralized, resulting in a triangular configuration. These features hint at the technical limitations in early stereo mixing and the need for mono compatibility in the 1960s. Consequently, the triangular mix in Daptone's recordings functions as a sonic marker of time that is used in the making of a retro sound.

What must be noticed, is that the appropriation of such "retro elements" in a sound is not the same as the use of the same elements in the original text. Askerøi applies the term *retronormativity* to describe "the mechanism of placing the 'past' in the 'present'" (Askerøi: 2013, p. 42). According to this, the triangular mix, when used in contemporary music, brings previous narratives of for example technological development into a new narrative. The triangular mix as a sonic marker of time appropriated in new music communicates the novelty of stereophonic recording of popular music in the 1960s, while also maintaining the music's nostalgic relationship to that period. It can accordingly be seen as not only a sonic marker of 1960s popular music but also as a sonic marker of nostalgia.

### **Cultural meanings of space**

In *Echo & Reverb* (2005), Peter Doyle addresses various aspects of how depth-related effects have acted as carriers of meaning in pre-stereo popular music. In the beginning of the book, he traces the notion of echo as something otherworldly and haunting to the Greco-Roman myth of Echo and Narcissus (cf. Doyle: 2005, p. 40). Aside from providing a sense of distance echo can offer a notion of mysticism, for example when used with several repeats in psychedelic rock music. Doyle uses the example of Elvis Presley's "Blue Moon of

Kentucky”, suggesting that the slap-back echo on Presley’s voice is a signifier of “authority, heroic anti-authoritarianism and the distant (or subterranean)” (ibid., p. 185). He further claims that the echo “serves to double the singer’s presence, as though to indicate he is being shadowed by another voice” (ibid., p. 186). The slap-back echo on Presley’s voice, while acting as a sonic marker of time due to the extensive use of such effects in late 1950s rock and roll, can then also be interpreted as a sonic marker of authority, adding to the narrative of the star Elvis Presley as a “superhuman”.

Another example, which relates to a long tradition of using reverberation on steel guitars, is Doyle’s discussion of the use of “Hawaiian” guitars in 1940s *hapa haole* music. Doyle draws on the Echo and Narcissus myth to suggest that “[s]obbing’ reverberant Hawaiian guitars lament the departure of the visitor, call vainly for his or her return” (ibid., p. 132). The sobbing refers here to the steel guitar’s ability to slide between tones. An example of how the sound of steel guitar is still associated with sadness is Daniel Romano’s introduction of his pedal steel guitar player in a live performance of the song “Hard On You”: “That’s mister Aaron Goldstein on the sad machine” (Music City Roots: 2013). Returning to the concept of sonic markers, the reverberant steel guitar may thus be said to have been established as a sonic marker of sadness.

Such relations between actual (or virtual) space and *metaphorical* space are also present in Lacasse’s discussion of Suzanne Vega’s “Tom’s Diner” (1987):

The song’s lyrics consist of a subjective description of several small events witnessed by the main character while sitting in a restaurant, for which the used vocal setting seems appropriate. Indeed, if a high level of reverberation had been used instead, it would most probably have led to a different connotation (Lacasse: 2000b, p. 179).

As a contrast to this, he describes the reverberation in Alanis Morissette’s “Your House” (1995) as “representing both the actual physical emptiness of the apartment [in which the

story of the song is carried out] and the character's 'emotional emptiness' [from finding out her lover has someone else in his life]" (ibid.).

### **The realism of virtual spaces**

The above discussions address the relation of recorded spaces to both actual (and other virtual) spaces and metaphorical spaces. However, although a recording can bear resemblance to actual spatial environments, for example a live musical performance, it is never a direct copy of such an environment. Simon Zagorski-Thomas' notion of *sonic cartoons* is meant to reflect this scope. The term elicits the role of recordings as simplified or schematic versions of reality (Zagorski-Thomas: 2015, p. 404). As Zagorski-Thomas points out, recordings are just representations of real or partly imagined performance, and just like visual art, recordings can range from highly detailed and realistic representations of reality to abstract sounds that is like nothing on earth (ibid., p. 405).

Producers and engineers have widely differing approaches to this subject. Whereas some strive to achieve a great sense of realism in a recording, others exploit the creative possibilities of digital sound manipulation (see, for example, Colletti: 2016; Crane: 2015). This distinction is addressed by Ragnhild Brøvig-Hanssen with her binary of "opaque" and "transparent" mediation: "transparent mediation implies that the listener ignores the mediation, while opaque mediation implies that the listener reckons with it" (Brøvig-Hanssen: 2013, p. 17). As explained by Brøvig-Hanssen and Danielsen (2016), what is at stake is not "whether the music is technologically unmediated or mediated, or how much technological mediation is involved, but rather how the technological mediation in the music is *experienced*" (Brøvig-Hanssen and Danielsen: 2016, p. 5, emphasis original). Since the music in a recording is always technologically mediated, then, it is always a sonic cartoon, even though the technological mediation is transparent.

## **Applying the sound-space in recording practice**

Summing up, the concept of sound-space gathers different theoretical approaches to popular music to provide insights into the ways in which the spatial formation of recorded spaces affects the narrative of a song. The theory of transtextuality suggests that elements of the recorded space refer to a specific text (either another recorded space or an actual space). Sonic markers, on the other hand, put the recorded space in a sociocultural context by referring to a convention specific to a time, place, style, etc. Sonic cartoons suggest that even if a sound-space in some way refers to real space it can only be a simplified representation of one. Having discussed some ways in which these theories can be related to spatiality in record production, I will now review two different versions of a song that I have produced and mixed. The song is “Die Young”, by the alternative country band Dingus. The two versions were recorded at different times, the first version in June 2014 and the second one about a year later. By describing how I applied the sound-space as a production-analytical tool when producing and mixing the second version, I will elicit some aspects of how producers and engineers can use this model to affect the resulting narratives of their productions.

The examples are excerpts from the beginning of the song, starting with acoustic guitar and harmonica, before the singer sings a tragic story of a girl who died at young age and that he himself wants to die so that he can be with her. Following this verse, a steel guitar enters. Then, after the second verse the rest of the band consisting of drums, bass, electric guitar and backing vocals, joins in for the chorus. The 2014-version (released as a single in January 2015) was recorded before I started the work on the development of the concept of sound-space. Although I was familiar (at least to some extent) with various concepts of spatiality in recorded music, I was still unaware of the great potential for affecting meaning through forming the recorded space. What is different in the 2015-version (to be released as

part of Dingus' self-titled debut album in 2016) is that I have based most of the production-related work in the sound-space concept.

### **2014-version (audio example 1)**

The song was recorded track-by-track, beginning with drums and bass recorded simultaneously (but in different rooms), together with an acoustic guitar as guide track. In the beginning of the song the acoustic guitar sound consists of both the guide track, panned to the far left, and a stereo track recorded later, which is spread out across the horizontal plane, suggesting a spread phantom image. Both guitars are in the near middleground. A lack of high frequency content in the sounds contributes to a relatively low position in the sound-space compared to other contemporary acoustic guitar sounds. The combination of the width and amount of low frequency makes it difficult to get a grasp on the depth of the virtual space in which the guitars are located. The space sounds neither very dry nor very reverberant, and the guitars mask the sound of any reverberation. It is thus difficult to make any immediate associations to it.

It is rather the harmonica and lead vocal that draws attention to the space. The harmonica is placed centrally, a bit behind the guitars. Its higher position makes it audible, nonetheless. Also the lead vocal is placed quite far away – it is not proximate. A long, but not very distinctive, reverb is applied to harmonica and lead vocal. It blends well with the local space of the guitars and gives the impression that the singer is placed at some distance from the microphone in a reverberant room. In addition, the reverb, a plate reverb simulation with a long reverb tail, is meant to simulate the reverbs often heard in 1960s country recordings. Consequently, the vocal's spatial environment acts as a sonic marker of time, as it relates the current sound-space to a narrative of technological development and production aesthetics specific of the 1960s.

The steel guitar enters after the first verse in the background on the right side of the sound-space. It has a long reverb applied to it, which places it in a deep local space in the far background. As previously mentioned, the use of reverb on steel guitar places the instrument in a long tradition of steel guitar sound in which it is associated with lament. The long reverb further suggests a very large room in which the steel guitar is placed unnaturally far behind the rest of the band. It can thus appear as opaquely mediated. The result is a correlation between (this part of) the recorded space and the metaphorical “otherworldly” space where the girl in the lyrics is: “I’ll see you on the other side”.

When the rest of the band enters, the acoustic guitar guide track is taken away, leaving more space for the band. The drums are in very wide stereo, and the toms are quite punchy and at the fore of the sound-space. The snare drum is in the middle of all three spatial dimensions. The bass is rather undefined, mostly fulfilling its role as a bass instrument rather than anything else, filling out the lower parts of the sound-space. Its rhythmic pattern is underemphasized, keeping the sound-space’s low-end more or less constant over time. The electric guitar is rather distant, but not as distant as the steel guitar. Placed slightly to the left of the sound-space, it provides balance in depth across the lateral plane, against the steel guitar.

Overall, the sound-space of the 2014-version of “Die Young” is very dense, not leaving much space for each sound-source, and it lacks contrast both in density and in width. There is little separation, for example between kick drum and bass guitar, due to several instruments occupying the same frequency registers and stereo space. All this adds to the sense of density. The sound-space has a high degree of realism relative to many other contemporary sounds, which is much due to the traditional lineup of the band. However, although the mediation does not immediately appear as opaque, the relatively low overall amount of high frequency content still reveals the mediation to some degree. The unnatural



location of the steel guitar adds to this sense of opacity. Still, it is difficult to get a grasp on the spatial environments in the recording, with the exceptions of the vocal space and the steel guitar space.

As will be discussed in the analysis of the 2015-version, there is an unfulfilled potential for emphasizing several aspects of the song through the formation of the sound-space. The parts of the spatiality that were possible to get a grasp on can both be interpreted in the direction of emphasizing the content of the lyrics. In addition, the resulting lack of contrast between different local spaces tends to undermine the possible distinction between the singer-songwriter and the band.

### **2015-version (audio example 2)**

It is possible to find examples of how spatiality affects the narrative in the 2014-version even though such considerations were not in focus during the production process. This demonstrates that the sound-space can also function as a purely analytical model. However, using the sound-space consciously throughout the production process will possibly contribute to a raised awareness of how spatiality can be formed to emphasize certain meanings in a song. Sound-space, when used as a production-analytical tool, can thus help the producer or engineer to fulfill what she regards as the potential of the song.

The 2015-version of “Die Young” was recorded a year after the first version, and with the sound-space model I have been able to better fulfill what I see as the potential of the song. By making me aware of the spatial environments of all sound-sources, the model has helped to form a virtual space with specific connotations to it that serve the song’s narrative. A central idea was to seize an opportunity that I overlooked in the production of the 2014-version: The harmonica-playing singer-songwriter evokes a Bob Dylan kind of figure that stands in contrast to the electric band entering later. I wanted to emphasize this contrast and thereby also elicit the contrast between the narrative of the lyrics and the narrative that can be

interpreted from the performance. Whereas the lyrics tell a dreary story that addresses “eternal questions” of life and death, the music is upbeat with a rather simple and “down to earth” performance.

The acoustic guitar in this version consists of one take, and, consequently, it occupies much less space than in the previous version. I wanted to make the singer-songwriter occupy less space, and emphasize the empty space in which he is staged when he is playing alone so as to reflect the emptiness he feels. I used stereo ambience microphones as well as artificial reverb, in addition to single close microphones, on both voice and acoustic guitar to form a space around him. The ambience microphones, of which the signal is delayed about 20ms, contribute to a “roomy” sound (most apparent when the harmonica is playing) with distinct early reflections and a short reverb tail. This spatiality provides a transtextual reference to a specific type of actual spatial situation, a medium-sized empty room, emphasizing that the singer-songwriter is alone. What’s more, it adds a sense of realism while also contributing to a seemingly less dense space than in the 2014-version. The artificial reverb, which has a much longer reverb tail and is most prominent on the voice, adds another more unrealistic space. This space takes much the same role as the vocal space in the 2014-version, emphasizing the dramatic theme of the lyrics. Also the steel guitar space is similar to that of the 2014-version, except from the instrument’s distance which is heavily reduced. Whereas the reverb still links the steel guitar to a tradition and its related meanings, the reduced distance suggests a more realistic location relative to the rest of the band.

When the full band enters, the sound of the singer’s environment is reduced by fading out the ambience microphones of both voice and acoustic guitar so only the two mono microphones remain. These sounds are kept in the middle of the sound-space, leaving more space for the band on the sides. The electric guitar and the steel guitar are panned to the sides of the sound-space, and they are more up front than in the previous version. Bass guitar and

kick drum fill out the central bottom. After analyzing the 2014-version with the sound-space model, I was aware that I wanted more separation between bass and kick drum in the new version. I accomplished that by placing the kick drum slightly above the bass with equalization and mic placement of both instruments, as well as tuning of the drum. The result is adequate separation between the two, something that contributes to a less dense space. The entering of the band further adds a contrast between two textures in both the vertical and horizontal planes. There is also more separation in both planes here than in the 2014-version, despite the rather widely spread image of the bass (a result of its high degree of low end).

The sound of the band is roomy, similar to the ambience in the intro and first verses. As all instruments appear as relatively near, the spatiality can be interpreted as a sonic marker of intimacy, which in turn emphasizes the band's image as a jovial small-town group. There is not much overall depth in the sound-space of the song, except from what results from the long reverbs on lead vocal and steel guitar. By being aware of the spatial environments of all the sound-sources, I have been able to form these spaces in ways that contribute to the song's narrative. A result of the use of both the sound of the recording room and long artificial reverbs is a contrast between these different spaces. I have utilized this contrast to emphasize both the ambiguity of the song and the contrast between singer-songwriter and band. The distinction between the realistic, or transparently mediated, intimate space in which most of the band is placed and the more opaque "effect" spaces (vocal space and steel guitar space) tends to emphasize the contrast between the intimacy of the performance and the metaphorical space of the lyrics.

This analysis has revealed that the sound-space model can be useful in the formation of an interesting sound that serves a song. Not only the technical aspects of achieving separation, width and contrast (through panning, equalization, mic techniques, reverberation and delay,

etc.), which are also addressed in existing models, is taken into account, but also possibilities for relating the recorded space to metaphorical spaces present in the song. Seen as a sonic cartoon, the sound-space of “Die Young” has a high degree of realism in both versions. However, the 2015-version seems more transparent due to its higher degree of definition in many of the sounds. For example, the ability to easily recognize the different spaces that appear in the recording tends to increase the sense of realism. But although the totality of the sound-space seems transparently mediated, there are some elements of opaque mediation that highlight important aspects of the song.

## **Conclusion**

The aim for this paper has been to suggest a way of investigating possible meanings of spatiality in recorded popular music. As a model to investigate this from a production perspective, I have presented the notion of the sound-space. Sound-space as a production-analytical approach, while building on existing spatial models for popular music analysis, aims to include the possible associations (for the listener) linked to the spatial formation of a recording. I have demonstrated that the sound-space can be a useful tool for working with spatiality through an analysis of two different recordings of the same song, of which one was produced using the sound-space, and one was produced without. Furthermore, it can also provide an analytical perspective to record production, in which the producer and/or engineer takes the role of a critical listener. Lastly, the sound-space can be a tool for raising awareness of how the spatiality of a recording contributes to the formation of text and narrative.

## **Audio examples**

Example 1 – Dingus, ‘Die Young’, recorded June 2014, mixed July 2014.

Example 2 – Dingus, ‘Die Young’, recorded June 2015, mixed October 2015.

## References

- Askerøi, E. (2013). *Reading Pop Production: Sonic Markers and Musical Identity* (doctoral dissertation). University of Agder, Kristiansand.
- Brøvig-Hanssen, R. (2013). *Music in Bits and Bits of Music: Signatures of Digital Mediation in Popular Music Recordings* (doctoral dissertation. University of Oslo, Oslo.
- Brøvig-Hanssen, R., & Danielsen, A. (2013). 'The Naturalised and the Surreal: Changes in the Perception of Popular Music Sound'. In: *Organised Sound*. 43, 1, pp. 71-80.
- Brøvig-Hanssen, R., & Danielsen, A. (2016). *Digital Signatures: The Impact of Digitization on Popular Music Sound*. Cambridge, MA: The MIT Press.
- Camilleri, L. (2010). 'Shaping Sounds, Shaping Spaces'. In: *Popular Music*. 29, 2, pp. 199-211.
- Colletti, J. (2016). 'Chris Coady: Common Goals'. In: *Tape Op: The Creative Music Recording Magazine*. 109, pp. 16-24.
- Crane, L. (2015). 'Glyn Johns'. In: *Tape Op: The Creative Music Recording Magazine*. 109, pp. 46-68.
- Danielsen, A. (1993). "'My name is Prince" – en studie i Diamonds and Pearls' (master's thesis). University of Oslo, Oslo.
- Dockwray, R., & Moore, A. F. (2010). 'Configuring the sound-box 1965-1972'. In: *Popular Music*. 29, 2, pp. 181-197.
- Doyle, P. (2005). *Echo and Reverb: Fabricating Space in Popular Music Recording 1900-1960*. Middletown, CT: Wesleyan University Press.
- Gibson, D. (2005). *The Art of Mixing: A Visual Guide to Recording, Engineering, and Production*, 2<sup>nd</sup> ed. Boston, MA: Thomson Course Technology.
- Lacasse, S. (2000a). 'Intertextuality and Hypertextuality in Recorded Popular Music'. In: Moore, A. F. (ed.) (2007) *Critical Essays in Popular Musicology*. Aldershot: Ashgate, pp. 147-170.
- Lacasse, S. (2000b). *Listen to My Voice: The Evocative Power of Vocal Staging in Recorded Rock Music and Other Forms of Vocal Expression* (doctoral dissertation). University of Liverpool, Liverpool.
- Moore, A. F. (2001). *Rock: The Primary Text*, 2<sup>nd</sup> ed. Aldershot: Ashgate.
- Moore, A. F. (2007). 'Introduction'. In: Moore, A. F. (ed.), *Critical Essays in Popular Musicology*. Aldershot: Ashgate, pp. ix-xxii.

- Moore, A. F. (2012). *Song Means: Analysing and Interpreting Recorded Popular Song*. Farnham: Ashgate.
- Moylan, W. (2015). *Understanding and Crafting the Mix: The Art of Recording*, 3<sup>rd</sup> ed. Burlington, MA: Focal Press.
- Music City Roots (2013). 'Daniel Romano "Hard on You"'. *Youtube* [online video clip]. Available at: <https://www.youtube.com/watch?v=6uZtCCm-xnA> (Accessed: May 2016).
- Zagorski-Thomas, S. (2016). 'Sonic Cartoons'. In: Papenburd, J. G., & Schulze, H. (eds.), *Sound as Popular Culture: A Research Companion*. (n.p.): The MIT Press, pp. 403-410.

## **Discography**

- Jones, Sharon & The Dap Kings, *Give the People What They Want*. [CD] Daptone Records, 2014