

MUSICAL MATERIALISM: A DEFENSE IN SEVERAL MOVEMENTS

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Movement 1: Introduction

Musical works are mysterious things. In our everyday speech, we talk about Beethoven's Fifth Symphony, The Beatles' "Yesterday," and Miles Davis' "So What" as if they are uncontroversial, clearly defined entities. But, when one considers what these entities are like, they become obscure. Two of the most troubling problems with musical works are that, while, for example, Beethoven's Fifth seems to exist, it does not exist at any particular place or time, and that, while any instance of a work is a physical thing, the work itself does not seem to be a physical thing. Two of the most common approaches to analyzing a musical work, in light of the preceding problems, are known as musical Platonism and musical Nominalism, with Platonism being the more commonly accepted of the two. In this paper, I will demonstrate why Platonism does not solve the problems it purports to solve and I will defend a version of musical Nominalism which draws influence from a view known as musical Materialism, a phrase coined by Chris Tillman (2011).

To begin, I will give an overview of the two views with which we shall be concerned, giving the Nominalist approach a somewhat broader explication in order to contrast the Nominalism with my own. Musical Platonists, broadly speaking, take two central claims to be true. The first is that a musical work is type, which defines it as a category or a class. The second is that musical works do not come into existence. Since physical things are not types and come into existence, it then follows that musical works are not physical. They must instead be extra-spatiotemporal objects of some kind; they are abstract objects in the sense Quine would use¹. This approach to analyzing a musical work bears a strong resemblance to the Forms of Plato's

¹ That is, an extra-spatiotemporal object. There are other senses of the term "abstract object," which will be discussed later.

ontology, which is why the view is called musical Platonism². On the face of it, this seems absurd. Surely, there was a time before which Chuck Berry's "Johnny B. Goode" did not exist and after which it did exist. Even if we construe this broadly by realizing that, if a work is just an instantiation, there is no *definitive* time at which "Johnny B. Goode" came into existence, there are certainly points in time at which it did and did not exist. For example, it did not exist in 1860 and it did exist in 1960. So, "Johnny B. Goode" must have come into existence, through one means or another, at some time between those two dates. This much seems obvious to the point of triviality. However, the Platonist can respond, I think with some force, that our notion of a musical work being "created" or "coming into existence" is wrapped up in vague language, and that the notion of "creation" and "discovery" in relation to music is much more muddled than one may care to admit. Kivy (1987) problematized our standard notions of "creation" and "discovery" by pointing out times throughout history, such as Pythagoras' realization of his titular theorem, in which there is not a clear distinction between an act of creation and an act of discovery. One may be tempted to say that Beethoven created his numerous symphonies, but it seems wrong to say that Pythagoras created his theorem.

According to its supporters, musical Platonism also has the benefit of having a strong explanatory power. One problem all theories of musical works must combat is the problem of how performances, especially imperfect performances, can be said to relate to the work. Musical Platonist, following in the long line of Platonic philosophies before it, claims that the work is an extra-spatiotemporal object and all performances of the work bear a relation to it, albeit imperfectly in a great number of cases. This relation is similar to the way Plato envisioned his forms relating to the objects inhabiting the physical world. For example, all birds, red things,

² Indeed, any view in ontology called "Platonist" typically means that the view posits extra-spatiotemporal objects.

and small things partake in the forms of “the bird,” “redness,” and “smallness.” From this, it is easy to see how a musical Platonist can make sense of performances. Let’s suppose we have two performances of Chuck Berry’s “Johnny B. Goode,” the performance that was eventually released as a single and a performance at the first show of a cover band with a tumultuous internal dynamic. For the musical Platonist, both performances are of “Johnny B. Goode” because they both partake in the sound structure, that is, the way the notes relate to each other, both in terms of pitch and rhythm, of “Johnny B. Goode;” one performance just happens to partake more completely in the sound structure of “Johnny B. Goode.”

‘Seems,’ however, can be a dangerous notion. Often, when we say ‘seems,’ we are making reference to some intuition we have. Intuitions, however, can be faulty. One clear example of this is that we intuitively take the world to work in more or less the way Newton described it in his physics. However, as Einstein showed with his theories of relativity, the world does not, in fact, work in the Newtonian sense; at best, Newton’s physics is an approximation of the way the world actually works. With that said, Platonism’s alternative, musical Nominalism, tries to sooth some of the peculiar implications that our intuitions can drive us toward. However, I would like to make a quick note about nomenclature. In many philosophical topics, especially in philosophy of music, I find that “Nominalism” is an ill-fitting title. At its most extreme, Nominalist world views claim that the thing in question exists only as a linguistic agent (hence the name “Nominalism,” which literally means name-ism). This is not the view of a musical work I wish to advance. However, another form of Nominalism claims that abstract objects, of the kind mentioned above, do not exist. This can then be coupled with the positive claim that all that exists are physical things. This form of Nominalism about musical works is what I shall defend and, following Tillman (2011), I will call it musical Materialism from here forward. I

make this change in jargon for two reasons. The first is that I hold that a position's name should positively say what it holds to be true, even if it is in an abridged form. 'Nominalism' fails at this because it makes a claim about what does not exist, extra-spatiotemporal objects, as opposed to what it (or, at least, I) does claim to exist, namely, material objects. The second reason is that, as previously mentioned, the term 'Nominalism' has two related but distinct meanings which can easily get confused. In response, I am trying to move toward terminological clarity and say explicitly that what a musical work is is a physical thing. With that said, why not musical Physicalism? Some philosopher draw a distinction between materialism and physicalism. Could this not cause more confusion? I am skeptical that it will because, while the views can be seen as distinct (I happen to uphold the distinction), with some using materialism to refer only to questions in the Philosophy of Mind, while Physicalism is the broader metaphysical theory. I tend to uphold the following line of thought: a theory is a Materialist theory if it claims that some domain of discourse is explainable in entirely physical terms. For example, one could be a Materialist about minds or musical works or universals. However, a materialist view does not necessarily imply that everything is physical. One could be a dualist about minds but still be a musical Materialist.³ A Physicalist, on the other hand, is someone who claims that the only things that exist are physical things. By this definition, Physicalism is the sum of all Materialisms; if you are a Materialist about everything that exists, you are then a Physicalist.⁴ Even more, I find that the term 'musical Materialism' has a stylistic weight to it that 'musical Physicalism' does not. I admit that this has more to do with taste and a personal appreciation for

³ With that said, I am not certain how an idealist could be a materialist about anything, but that, I confess, comes more from my lack of familiarity with idealism than it does from an incompatibility between the two.

⁴ Perhaps I should say, "about everything that *actually* exists," lest any realists concerning possibilia decide to mount an objection.

poetry rather than detached adherence to the (loose) rules of philosophical nomenclature, but I think the benefits of choosing a more poetic name outweigh the potential costs.

With that digression on nomenclature aside, one might rightly ask the question of what a musical work is if it is not an abstract object. There are several different views one can take. For example, one can be a type theorist, much like the Platonist, but hold the view that the types are spatiotemporal entities rather than extra-spatiotemporal. This view, which might be called an Aristotelean approach, is similar to the way D. M. Armstrong treats universals. Equally, one can take a trope theorist approach and claim that each instance of a piece exhibits the trope of *musical form A* for whatever song is being heard at the time. However, it is more common to view a musical as a set of performances, with the criteria for set membership changing from theory to theory. Goodman, for example, claimed that a performance must be accurate to be included in the set (1976).

I would like to pause here to draw a distinction that will be important later. Several times thus far, I have made mention of abstract objects. In contemporary jargon, “abstract object” refers to an object that exists outside of space and time. This usage is often attributed to Quine, who viewed abstract objects as extra-spatiotemporal objects. For Quine, sets and universal, if they exist, are abstract objects (Quine 1980). However, there is another possible meaning for the term ‘abstract object’ that is not often used in philosophy. I will call this the Williamsonian usage because I derive this meaning from D. C. Williams’s ‘abstract particulars.’ For Williams, an abstract particular is a particular thing that has been removed from its context. He uses the notion to promote a trope theory of universals, in which a red apple is red because, when its redness is viewed apart from its being in the apple, we can refer to it as “red,” even though it is “the red of the apple” (Williams 2018). In this way, an abstract object in the Williamsonian sense is an

object that has been removed from its context and analyzed on its own; it has been abstracted, so to speak. This distinction will become important later.

Movement 2: An Attack on Platonism

As presented previously, musical Platonism seems like a coherent viewpoint that has exceptional explanatory power. With this I must agree. Many philosophers have gotten a great deal of explanatory mileage out of musical Platonism, which is admirable. Equally, that I can see, there is nothing blatantly contradictory about musical Platonism. The problem I find with musical Platonism, and the points that I will argue against, are the arguments used to promote Platonism. To be specific, I will attack two common arguments used to motivate a Platonic view of music. The first will be the argument presented by Kivy described above. The second is an argument against a Materialist view for which the Platonists seem to be able to provide a clear and simple response, which I shall explain shortly. I will start with Kivy's argument.

The conclusion to Kivy's argument is that there is what we, in ordinary language, call creation can, in many cases, be paraphrased as discovery. He gives three examples in order to set up an analogy: of Pythagoras and his titular theorem, of Mozart's composition of *Don Giovanni*, and of Edison's invention of the lightbulb. Of the third example, he paraphrases Edison's invention, a creative act, as his discovery of how to produce light from electricity. However, his example of Pythagoras and the Pythagorean Theorem seems to be of an altogether different caliber. Kivy admits openly that the way we talk about mathematics tends to Platonize it, but even taken from a non-linguistic approach, there does seem to be something unique about mathematics when it comes to discussions of discovery and creation. Unless one takes an instrumental approach to mathematics, it seems ridiculous to say that the Pythagorean Theorem did not exist, if not in writing, at least in concept before Pythagoras showed that the square of the

hypotenuse of a right triangle is equal to the sum of the squares of the other two sides. Even more, the Platonic approach to mathematics has been the favored approach among mathematicians for centuries. Many mathematicians view numbers, geometric figures, sets, and other mathematical objects as Quinean abstract objects. However, when dealing with abstract objects, we must be very careful that we are not confusing a Williamsonian abstract object for a Quinean abstract object. In the case of mathematics, this confusion is often made. A perfectly clear picture of mathematics can be created that treats mathematical entities as natural states or properties of objects that are abstracted from the objects. To bolster this claim, consider an argument made by Charles Pinter, a professor of mathematics at Bucknell University. He claims that abstraction is a common part of human interaction with the world, claiming “[n]ature presents us with a myriad of interwoven facts and sensations, and we are challenged at every instant to single out those which are immediately relevant and discard the rest” (Pinter 1990, p. 19). He gives the example of physicists, who create abstractions from natural events like force and velocity and “find laws which govern these *abstractions*” (ibid.).

The same can be said about mathematical objects. There does not exist a *real* triangle in the world. There are very close approximations, but no real triangle, because objects in the world do not lineup neatly or maintain their length for very long. If, by random chance, a perfect triangle was to exist, it would almost immediately be bent out of shape by the little fluctuations in atomic and subatomic movement. This does not, however, preclude us from studying triangles as an abstract object in the Williamsonian sense. That is, an object which has been abstracted from its context with certain individualizing characteristics removed and other universalizable characteristics held constant for analysis; it would be the “perfect” triangle, so to speak. What characteristics are kept and which are removed depends on why we are abstracting and is

determined largely on pragmatic grounds. The fact that certain features of our world follow the patterns of abstract objects seems to follow from the local regularities of our universe's particular geometry and not, as the Platonist would propose, from extra-spatiotemporal entities. Put simply, mathematics does not need to rely on Quinean abstract objects because it can be done with just as much rigor, clarity, and efficacy with Williamsonian abstract objects. Because mathematics can be constructed without the need for Quinean abstract objects, Kivy's argument by analogy loses a great deal of its force. However, the other argument, often posed against Nominalist and Materialist views against music, could, on the face of it, give the Platonist more ground on which they may stand.

The problem, which is known as the inheritance problem, goes as follows. Because musical Materialist accounts of a musical work require that the work be made up, in some way, of its performances, the "work[] inherit[s] all of the features shared by all of [its] (proper) parts or concrete manifestations" (Tillman 2012, p. 252). It then follows that, if every performance of *The Rite of Spring* contains wrong notes, then *The Rite of Spring* contains wrong notes. This premise is justifiable because, in practice, no performance is going to follow a score correctly because there will always be small imperfections in the notes or melody played. More often, however, the mistakes are not going to be simply "small imperfections." However, as the opponent of musical Materialism claims, *The Rite of Spring* does not contain wrong notes. Consequently, musical Materialism leads to a contradiction. Since neither of the other premises is false, musical Materialism must be false. It is here the musical Platonist may enter. By construing the musical work as a Quinean abstract object, the musical Platonist can say that, while each of the performances of *The Rite of Spring* contains wrong notes, *The Rite of Spring*, the abstract object, does not.

Put simply, this is another powerful argument by the musical Platonist that could convince even the most stubborn musical Materialist. It does, however, have its own problems. While the musical Materialist may have an inheritance problem, on the same token, the musical Platonist has an accounting problem. Consider this example: imagine Pink Floyd performing “Shine On You Crazy Diamond.” There is no doubt that it would be immaculate. The famous guitar riff that, in many ways, exemplifies the song goes like this:



I shall call this performance “SOYCD.” Along with the band, however, many guitarists, both professional and novice, have played this riff, either in a full performance, in demonstrating the riff, or in learning the song. In those many imitations of Pink Floyd, however, at least one guitarist has likely played



instead of the correct notes. I shall call this performance “SOYCD₀.” For those who cannot read sheet music, the SOYCD goes Bb – F – G – E, while SOYCD₀ goes B – F – G – E. If we assume musical Platonism is true, how does SOYCD and SOYCD₀ relate to “Shine On You Crazy Diamond?” Do they exemplify the same musical work or are they different works? The Platonist can answer in one of two ways. They can either answer that they both exemplify “Shine On You Crazy Diamond,” but one does so to a lesser extent than the other. This, however, opens up questions of how an instance of a work relates to the work itself, which, at present is rather mysterious. Another possible answer is that SOYCD relates to “Shine On You Crazy Diamond” while SOYCD₀ relates to a different work, let’s say “Shine On You Crazy Diamond 0.”

However, these are not the only ones, as there are many different places throughout “Shine On You Crazy Diamond” where one band member could make a single mistake. For example, if we assume, for every second, that one of the four band member makes a mistake while playing “Shine On You Crazy Diamond” and no one else makes a mistake for the rest of the performance, there are over 6,000 different “Shine On You Crazy Diamond”s. If we allows for a greater number of mistake combinations, the number of possible “Shine On You Crazy Diamond”s surpasses what a person can reasonably be asked to conceive of in any meaningful sense. Remember that, for this version of musical Platonist, each of these mistakes corresponds not to the abstract object “Shine On You Crazy Diamond,” but to an object very similar, though different from, “Shine On You Crazy Diamond.” When this theory is applied to every song, the number of abstract objects, many of which would likely be left without a corresponding performance (at least in the actual world), multiplies to numbers that are, from a practical standpoint, incalculable.

Neither of these arguments are knock-down arguments against musical Platonism. Nor do I intend them to be. They do, however, exemplify some of the motivational problems of musical Platonism. The first demonstrates that the creation to discovery translation, as purportedly exemplified by mathematics, does not actually hold for mathematics, which brings into question whether it holds for music. The second shows that the musical Platonist is either committed to entities that are not fully describable, and are, consequently, questionable, or that are far more numerous than many anticipate. With these problems in place, one wonders whether a more parsimonious theory can be concocted.

Movement 3: A Description and Defense of a Musical Materialism

To begin this section, I would like to make a few observations. The first is that any particular performance of a musical work is a physical thing extended in space and time. The second is that, as the musical Platonists have shown, abstract objects are power tools for grouping objects under a single banner. With that said, we need not confine ourselves strictly to Quinean abstract objects. But, first, let us look at how performances, and physical things in general can relate to one another. I would like to propose that the thing that makes two performances of the same work is their sound structure. It is important to stress that pitch and rhythm are both relative in this case. Assuming the ratio between the frequencies of the pitches and the note durations are the same, it is absurd to assert that two performances are different works just because one was played in a different key or a few beats per minute faster than the other. This is not novel; Kivy holds this view (1986). However, unlike Kivy, I do not think there needs to be recourse to extra-spatiotemporal entities to analyze a musical work. Instead, we can look at the physical effects of a performance. Because any performance is a sound structure and sound is a physical thing (in this case, atoms and molecules together moving as a wave at certain frequencies) and physical things have physical effects, it then follows that a performance has physical effects, namely the effect of the sound on the things around it, including any persons present. If a person hears, for example, the guitar riff for “Shine On You Crazy Diamond” and is familiar with the song, they will recognize it. If they hear a full band performance of “Shine On You Crazy Diamond,” even if the riff is played wrong, they will recognize it as “Shine On You Crazy Diamond” with an inaccurate guitar riff. Why is this? The total effect of the music is very similar between the perfect and imperfect performances. Remember that perception of sound is caused by soundwaves hitting the ear drum and sending a signal to the brain. Similar

performances sound similar because they vibrate the eardrum in similar ways. Furthermore, the reason they vibrate the eardrum in similar ways is because they have similar sound structures.

But, one might ask, what does it matter that two sound structures are similar? It matters in the same way that two right-angled objects being candidates for the application of the Pythagorean Theorem matters. Because the sound structure is similar, we can compare performances of a musical work by thinking of the work as a Williamsonian abstract object, that is, an abstraction from a particular performance with certain aspects held constant. One might ask, I think rightly, on what grounds we hold certain aspects constant between two performances. For this, I reference similarity. We know two pieces can be very similar, say a full band performance containing SOYCD and another, almost identical full band performance containing SOYCD₀. They are, in fact, as similar as two performances can be without being note-for-note equivalent. However, the work is not restricted to only these two performances. There are other performances that are very close, but that differ in different ways. We must also take those performances into consideration. In short, a musical work is a Williamsonian abstract object constructed on the grounds of its various performances. It is in this way that this theory can be called musical Materialism, because it posits that the work is composed from its concrete performances.

While this definition is workable, it does have a major problem. Comparing two things and looking for similar features can be useful for setting a basis for many things, but, to be useful, we also need certain limiting criteria. Consider the Mad Hatter's question "why is a raven like a writing desk?" Many have put forth answers to this question, each of which hint at some similarity between ravens and writing desks. However, there is an inherent problem in posing the question this way. The Mad Hatter has not given any indication of which features of the raven

and the writing desk we should be concerned. The question is too open ended. This is not a problem for the Hatter or for Lewis Carroll. The question is posed as a riddle, something that is supposed to make you think both critically and whimsically and open up new avenues of thought. But, when we are in a philosophical discussion about comparisons, certain limiting terms need to be put in place because we are trying to get to the bottom of the question, not merely pose cute riddles to one another.

With that said, let us consider the spread of performances that actually exist. We know that the performances are comparable in numerous different ways, so let us focus specifically on sound structure. When we do this, the problem becomes much simpler because, while there are many different actually existent sound structures, they tend to form clusters of similarity with gaps between those clusters; it is these clusters that are the “work,” so to speak. One can draw a comparison to color. The colors exist on a spectrum from dark red to violet with many different colors in between. However, our color perception groups the spectrum into different categories. Certain colors are easily distinguished from one another while other are more similar. When I speak of clusters in similarity, I mean it in the same way “green” can refer to a cluster of colors, from lime green to pine green. Similarly, when I speak of gaps, it is in the same way there is a gap between green and red and green and blue. Clearly, green is closer to blue than it is to red. So to with sound structures. Most pop songs are closer to each other structurally than they are the works of Tchaikovsky; recently, songs that are aggressively similar have led to legal disputes. When it comes to the performances of songs, however, these gaps are often much more pronounced than they are in the colors. Two songs that have the same chord progression and even the same rhythm will have different embellishments, different melodic lines in the song. It is on those grounds you can set up limiting cases.

One may ask who or what determines which Williamsonian abstract object, which cluster, deserves the title of “the” musical work. Surely, a work has certain features that do not change, regardless of how many people play it inaccurately, and someone or something must determine what counts as definitive. As intuitive a position as this may seem, I do not think it is warranted. It is worth remembering that, for most of human history, music existed primarily as folk songs, passed from person to person through an aural tradition. Indeed, many great songs in the modern canon are public domain folk songs for which a single *definitive* version does not exist. Consider the song “House of the Rising Sun,” which fits the previous description. If you were to survey the population, the version most would call the definitive version would be the cover by the Animals. This is not, however, what I mean by *definitive*. While the Animals’ cover of “House of the Rising Sun” is the most popular version, it was neither the first nor last cover. Bob Dylan, for example, recorded a cover that preceded the Animals’ version. The only reason the Animals’ version is seen as definitive is because it is the most popular. However, when looking for a metaphysically definitive version of a musical work, there simply is not one; or, put more accurately, as intuitive as it may seem, we have no reason to believe that there is one, which, until the evidence suggests otherwise, is sufficient reason to not believe there is one.

Movement 4: Coda

At the outset of this essay, I pointed to two problems that a theory of musical works need to address: that a work seems to exist, but not at a particular place and time and that, while the instances of a work seem to be physical things, the work does not. Throughout the previous section, I hinted at how a cluster approach can settle these issues, but I will make the answers explicit. The cluster approach denies the assumption of the first problem in that it denies that the work needs to be at a particular place and time to exist. This may seem like an absurd

conclusion, but, on inspection, most things deny this assumption. Consider, for example, the Roman military. Being an entity composed of many persons deployed across Europe, Africa, and Asia, it did not exist at a particular place and existed at varying sizes across time. Yet, we would not say that the Roman military did not exist simply because it could not be definitively and unambiguously located. Even more, the notion of a thing existing at a *particular* place and time could be suspect, depending on the conditions one uses to specify what constitutes a place and time. In many cases, places and times are much more gerrymandered than we would care to admit. Equally, in saying that a work is a similarity cluster of its physical performances, the cluster approach denies that a work is nonphysical.⁵

One thing that may bother the reader is how do we determine between possible performances that seem to be between two clusters; what do we do with performances found in the gaps, so to speak? To answer this, I shall provide a few examples. First, I find it unlikely that anyone would try to claim similarity between the sound structures of performances of “Row, Row, Row Your Boat” and a death metal song. The similarities would be so minimal in terms of the melodies, harmonies, and rhythms used that the comparison would not be useful. This is an extreme example, but, in more modest forms, the same general approach will separate a good majority of songs from one another. In instances where a performance is close enough to two clusters to cause concern, I would suggest a holistic approach to the appraisal of the offending performances. More specifically, I would suggest looking to the clusters and asking what minute details in the performance can push it one way or the other. Suppose two clusters are structurally identical except in the middle eight, where the first bar of one begins with a B in the main

⁵ Perhaps one could argue that the clusters are not physical. However, I cannot think of any way this argument could be constructed, since the parts of the cluster are all physical and there does not seem to be anything above and beyond the cluster.

melody and the first bar of the other begins with a D in the main melody. The controversial performance features a C#. Depending on the key of the songs and the chord voicings used prior to and in the section of the song, the performance can be grouped into one cluster or the other based on the way the C# works *in the song* from a music theoretical standpoint. If even this does not succeed in bringing clarity, I would recommend, as a means of settling the controversy, a pragmatic approach, namely how will the inclusion of the performance affect the nature of each cluster. Specifically, consider how the performances inclusion in one cluster or the other could affect future decisions in determining where an ambiguous performance lies. If, after all this, the performance is still unresolved, it may be worth considering that it is different enough from its two closest clusters that it is, in fact, a cluster all its own.

To conclude, I would like to make some remarks on a notion employed throughout this essay: similarity. As a relation, similarity seems at once very familiar and very strange. I have noted previously that similarity between two things is always context dependent; two things must be similar *in some way*. Given this, one could write a similarity relation as $S(a, b, F)$, where a and b are subjects and F is a predicate. Given the nature of similarity, one can see that, under normal circumstances, it defines an equivalence class, since it is reflexive, symmetrical, and transitive. However, similarity is not a strictly logical relation, as there is a lot of flexibility in how strictly or how loosely we restrain the predicate F . This is not a great problem for the cluster theory, since it implies a looser notion of similarity, given the great many ways in which performances of the same work can differ, but it is why I saved any talk of classes until now. The precise logic of similarity is a topic shrouded in mystery, precisely because it is so imprecise. But, for the present, the loose notion at play in the cluster theory is sufficient to provide a strong contender for a theory of musical works.

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