

Musical works, recordings and their digitisations

New philosophical types

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Introduction

As with the development of most technologies, the history of sound recording and re-production is forked with twists and turns that variously reveal mankind's remarkable ingenuity and inventiveness when working with materials, mechanisms, methods and, ultimately, media. Throughout this one-hundred-and-fifty-year history, recording technologies involved the use of coated rolls of paper with large conical horns, cylinders and discs covered with wax or soft metal, shellac and later polyvinyl plastic discs attached to metal or Perspex membranes, magnetic tape with electrical microphones and, more recently, a plethora of digital technologies for which an extremely rapid sampling of sounds is at the heart of the contemporary recording process (Chanan, 2000). Many of these technologies, which may be conveniently grouped into the acoustic, electrical, magnetic and digital eras, shared a relatively short life-span, being quickly discarded in favour of advancement. With the arrival of each new technology, those of previous eras disappeared from use, save for their preservation in the occasional centre, studio, museum or collection with a mandate for upholding their position in the history of sound recording.

In contrast to the evanescence of technology, recordings of past eras are extremely present. This is, at least in part, since they offer unique insights into a vast gamut of historic performances, events and happenings, channelling sounds of the past to ears of the present. Such recordings offer a rich and relatively untapped primary resource ripe for the picking of historians, linguists, musicologists, performers, among many more. Access to these resources, however, involves both a technical and environmental challenge; not only do past technologies need to be carefully preserved in order that these recordings might be heard, but interested parties need to travel to wherever they might be housed so that they might have an opportunity to encounter them. In this context, it is perhaps unsurprising that digitisations of past recordings have become, and will continue to be, a plausible means of access, allowing interested parties to encounter early recordings without recourse to early technologies. Digitisations, which involve transference from

an original medium into the digital domain,¹ can be easily catalogued, released, shared, streamed and, consequently, accessed.

The value of both recordings and digitisations will invariably depend on what has been captured and how this is used within a given context. As such, it is difficult to generalise about their specific worth. The very fact of their existence, however, produces a range of ontological questions that are sufficiently general to be asked across the board: What are recordings and digitisations? How do they exist? Where do they exist? How do recordings and digitisations relate to one another? Which other relations might they enter into? In providing answers to these questions, the article offers an ontological account of both recordings and digitisations. Employing the realist notion of types and tokens, it presents and defends a position in which both recordings and digitisations are taken to be types, their playbacks tokens, and the associated media an intermediary. This view, which focuses exclusively upon recordings and digitisations of music,² correlates with existing conceptions of musical types and tokens, in which works are viewed as types, performances as tokens, and associated scores as intermediaries. Placing this existing conception alongside the proposed revisionist view, however, produces an ordered sequence of types and tokens, through which their manifold relations may be expressed; first-order types and tokens, in the form of works and performances, relate to second-order types and tokens, in the form of recordings and playbacks which, in turn, relate to third-order types and tokens, in the form of digitisations and playbacks. As a starting-point, the notion of types and tokens is introduced with regard to the existing conception of musical works. This introduces terminology and concepts that are subsequently employed in the discussion of recordings and digitisations.

The musical work: a philosophical type

If nothing else, the ongoing and somewhat contentious debate surrounding musical works abundantly testifies to the lack of consensus in the field of philosophy. Most philosophers agree that musical works are abstract formations, but this leaves open a multitude of possibilities, albeit with relatively subtle differences between them. For the sake of clarity, and to avoid a lengthy comparative analysis, this article focuses upon the realist³ notion of types and tokens. This notion has, in recent years, received substantial

1 The process of digitisation is explained in detail further on, but it is worth highlighting a difference between the term *digital music*, which is composed or created using digital technologies, and *digitisations*, which are always transfers from one medium into the digital domain.

2 Although non-musical recordings and digitisations may invite a range of different ontological questions, it is assumed that the central thesis of this article may be applicable elsewhere and therefore offer a blue-print or starting-point for investigations into other fields using a similar ontological approach. Music is selected in this instance in order to focus and simplify the debate, as required for an article of this length.

3 Realists identify relatively subtle differences between properties, kinds, universals and types. Both Kania

support from many of the most significant musical philosophers working in the field of musical philosophy, and is therefore the closest thing possible to a dominant ontological paradigm (Bender, 1993; Davies, 2004; Dodd, 2007; Godlovitch, 1998; Kania, 2005; Kivy, 1983; Rohrbaugh, 2005; Scruton, 1994; 1999; Stansbie, 2014; 2015; Thom, 1993; Walton, 1988; Webster, 1974; Wollheim, 1980). A very brief survey of alternative theories is offered at the end of this section, but it is worth noting from the outset that the type-token theory constitutes the basic premise upon which the remainder of this article relies.⁴

The terms 'type' and 'token' derive from Ch.S. Peirce's semantic distinction between words and occurrences of words; Peirce referred to the various occurrences of words as 'tokens', noting that these words must be occurrences *of something*, which he called a 'type' (Peirce, 1933, p. 242). Although originally employed in the field of linguistics, the articulation of this one-many relationship has been applied elsewhere (Rohrbaugh, 2005). For example, in *Modern philosophy: an introduction and survey*, Roger Scruton uses the terms type and token to explain two different ways of referring to the Ford Cortina: one type (the Ford Cortina) has many individual tokens (the specific Cortinas). Scruton goes on to note that we discuss types, such as the Ford Cortina, as though identifying a physical object. However, he notes that types are only really encountered or understood in or through their tokens. This is because a type, unlike a token, is an abstract, generalised entity⁵: 'The Ford Cortina [...] is to be described and explained in terms of concrete processes in the spatio-temporal world. Nevertheless, there is no place where the Ford Cortina is.' (Scruton, 2004, pp. 84–85) In this way, Scruton suggests that types straddle a fundamental ontological divide between concrete and abstract modes of existence (Scruton, 2004, p. 84; 1999, p. 104); types do not exist in the concrete, spatio-temporal world. However, they are encountered *in* or *through* their various concrete manifestations in the form of tokens. Thus, a type 'is an abstract object, which itself bears the predicates of the individuals that exemplify it' (Scruton, 1999, p. 104).

In recent years, an increasingly large number of philosophers have employed the notion of types and tokens when discussing music. According to this notion, specific works of

(2005) and Rohrbaugh (2005) claim that differences between these accounts are extremely subtle, offering excellent accounts of the differences. Rather than rehearsing these differences, we shall focus upon the notion of types, since this is the most rehearsed of the realist theories.

- 4 Despite this, the entire argument might be adapted and transformed with relative ease to sit alongside other musical work theories; a few examples are offered throughout the course of the article.
- 5 Like many in his field, Roger Scruton believes that some objects or entities have an abstract mode of existence: '[D]o we not also refer to and describe things like numbers, classes, possibilities and fictions? Numbers especially are the source of much philosophy [...] we give them names, and strive to discover the truth about them. Yet it is absurd to say that they exist in space and time: as though there were some place where the number nine could at last be encountered.' (Scruton, 2004, p. 84)

music are viewed as types, and their performances as tokens of these types. This idea similarly captures a one–many relationship, for which one musical work may have many performances. Furthermore, it implies that we only even encounter musical works in or through their performances and thus, in a sense, indirectly (Bender, 1993; Davies, 2004; Kivy, 1983; Scruton, 1994; 1999; Walton 1988; Webster, 1974). Musical works are thus seen as abstract entities known through their concrete performances.

Types are almost always related to an 'intermediary', a term used by Wollheim to describe a structural plan, instruction, recipe or script that must be followed to produce tokens of the type in question (Wollheim, 1980). For the Ford Cortina, the intermediary is the design engineer's plan, or manufacturing instructions. In the case of music, the intermediary is typically a musical score. In some cases, intermediaries are highly prescriptive, producing uniformity among the tokens of a type; the minting of coins is a good example, where uniformity is prized as value. In other cases, intermediaries are somewhat less prescriptive, allowing for variation among tokens; individual Cortinas, for example, come in many different colours, and this again prized as a value. This highlights one of the most surprising things about types and tokens: an intermediary set of instructions may be followed, but most intermediaries will still allow for a degree of variability among the fully-formed tokens of a given type.

Variability is certainly found in the case of music. This is partly because musical scores, as intermediaries, may be read and understood in many different ways; the notion of interpretation, for example, follows from this, and variability in this context is most certainly prized as a value in live performance. Unsurprisingly, then, philosophers have tried to find ways to explain variability, often suggesting that it is not simply scores that produce distinctiveness. Roman Ingarden, for example, suggested that musical works have an in-built *sphere of irrelevance*, which enables performances to be distinctive whilst remaining faithful (Ingarden, 1986, p. 23; orig. 1931). Stan Godlovitch makes a similar claim, when he suggests that musical works *underdetermine* their various performances; certain elements are only determined during a given performance as instrumental musicians make their various decisions. As such, performances of the same work are prone to potentially substantial variations with the associated work only partially determining whatever emerges (Godlovitch, 1998, p. 82). In *Musical works and performances: a philosophical exploration*, Stephen Davies agrees that musical works are schematic types, but argues that the degree of schematisation will depend upon the nature of the work in question (Davies, 2004). He goes on to suggest that musical works can be placed on a continuum with thin works at one end and thick works at the other:

If it is thin, [...] most of the qualities of a performance are aspects of the performer's interpretation, not of the work as such. The thinner they are, the freer is the performer to control aspects of the performance. [...] The thicker the work, the more the composer controls the sonic detail of its accurate instances.⁶ (Davies, 2004, p. 20)

With the above in mind, one may refer to musical works as schematic *types*, their performances as *tokens*, and the associated score as an *intermediary*. A given score must be followed in order to produce performances which, in turn, instantiates a given work. A one-many relationship, therefore, holds between the work type and its performance tokens. This may be presented as follows:

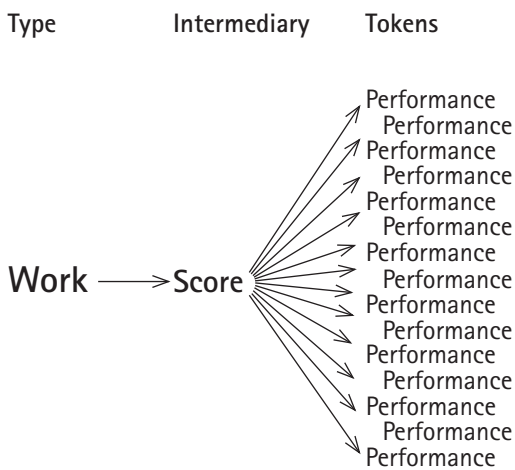


Figure 1.

Although the remainder of this paper is predicated on the theory of types and tokens, it is worth pointing out that this is simply one of the many ontological theories dealing with musical works. The school of nominalist philosophy, for example, would not accept the idea that works are abstract entities, arguing instead that musical works are simply sets, or classes, of performances. On the face of it, this view seems relatively straightforward. However, leaving aside the thorny issue as to whether a set, or class, is itself an abstract entity, the process of grouping performances into a set is problematic, since members of a set must display some degree of conditional uniformity in order to be grouped together. In some cases, such grouping may be relatively easy, yet we know that

6 Davies's thick-thin thesis does not seek to quantify the various sounds occurring during a given performance: 'performances of thin works are as replete with acoustic information as are those of thick works, but, for performances of thin works, more of this information is referable to the performance than to the work' (Davies, 2004, p. 20). Thus, large orchestral works are not necessarily any thicker than solo piano works.

musical performances differ, often in substantial respects, and this makes it very difficult to establish criteria upon which members may gain entry to a given set.⁷ Nelson Goodman, a well-known nominalist theorist, attempted to avoid this particular problem by suggesting that the members of a given set, or class, will be grouped if they comply with the instructions set out in an associated musical score (Goodman, 1969). In this way, Goodman's score-compliance theory addresses the various problems associated with the classification process, clearly defining the degree and nature of conditional uniformity amongst the members of a musical work's performance class. This idea has drawn much criticism (Davies, 2004, pp. 40–41; Kania, 2005, p. 40; Goehr, 2007, pp. 13–43; Scruton, 1999, p. 112). There are two central objections. Firstly, musical works are not always scored and, secondly, performances of works may contain mistakes (Goehr, 2007, p. 40).

An alternative position, common to idealists, focuses upon universals; the qualities or characteristics that physical objects have in common. Whereas classes are formed from their members, universals are those properties instantiated by physical objects; universals are repeatable and, crucially, present in all of their instances (Wollheim, 1980). Idealists assert that universals are properties that are mentally constructed. Accordingly, both Collingwood (1958) and Sartre (1966) consider musical works as mental entities, since their being rests upon a 'total imaginative experience' (Collingwood, 1958, p. 144). Unsurprisingly, this view has been widely criticised. Kania (2005) argues that if pieces of music can be reduced to purely mental entities then they would surely only exist at those moments when they occupy our thoughts, rendering them as contiguous instances that exist intermittently. Thomasson (2005) warns that the mere suggestion that we conjure real, mind-external objects puts us at risk of treating those entities as phantasms – a position much harder to justify than the notion of works as abstract types (Thomasson, 2005, p. 120).

There are, of course, many other theories that might be introduced in this context. However, since the type-token theory has so much traction in the context of contemporary ontological thought, this has been chosen as the most credible theoretical position. As such, we shall now turn to recordings and digitisations and, in doing so, consider three central possibilities for how the type-token theory might be employed to address their existence. The first possibility, as we shall discover below, starts with the idea that recordings and digitisations are simply additional instances, or tokens, of musical works, thus expanding the potential number of tokens for a given work type.

7 This becomes increasingly pronounced in cases where works are open (such as Stockhausen's *Klavierstück XI* and Boulez's Third sonata for piano). The performances of these works may be radically distinct due to the 'considerable autonomy left to the individual performer in the way he chooses to play the work' (Eco, 1989, p. 18). A detailed discussion of open works may be found in Eco (1989).

Possibility 1: an addition of tokens

The previous section considered how philosophers of music have referred to musical works and their performances; a specific type of work is encountered in or through token performances, with an intermediary score enabling the latter to be produced. Using this same terminology and conception, it might seem reasonable to assume that recordings and digitisations are also tokens of a given work type, and therefore similar to performances. Thus, a musical work type may be encountered in or through its various tokens, which come in the form of performances, recordings and their digitisations. This possibility might be represented as in the following diagram:

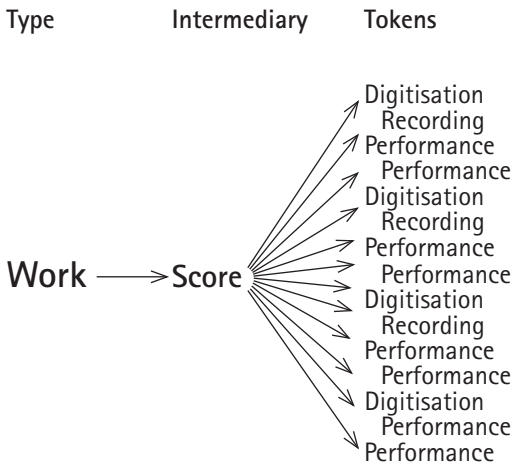


Figure 2.

On the face of it, there are good reasons to support this idea; it would be hard to deny that we encounter musical works by listening to both recordings and digitisations. Furthermore, although recordings and digitisations involve a degree of fixity that is uncommon to live performance,⁸ we still encounter multiple differences amongst individual recordings and digitisations of the same work, and therefore variability is arguably just as prominent. Indeed, different recordings of a work are also prized for their distinctiveness and thus, even in the context of recording, variability is a value. Despite this, there are other reasons why one might disagree with the idea under discussion; we shall briefly consider this with respect to recordings before moving on to consider digitisations.

In *Works, recordings, performances: classical, rock, jazz*, Andrew Kania suggests that classical recordings involve a transparent medium. By listening through this medium we

⁸ Some, such as Echard (2008), have countered such claims, suggesting that nothing can ever be fixed. An alternative suggestion is that the medium is fixed, rather than the music (Harrison, 1999).

encounter, albeit indirectly, a once-upon-a-time performance (Kania, 2007). Kania arrives at this point after first suggesting that recordings are often an assembly of different performances: 'even if a classical recording is transparent, what you see through its window is not a single event – a performance – but a mishmash of different bits of different performances tacked together with corrections pasted over certain spots, and so on' (Kania, 2007, p. 7).⁹ Despite this, Kania goes on to suggest that the medium remains transparent: 'What we rightly appreciate in a classical recording is the finely honed sonic sculpture we hear on the surface, not the frantic chiselling that we know lies behind it' (Kania, 2007, p. 7). Thus, for Kania, it does not matter whether a performance actually took place; listeners believe that they encounter performances in or through classical recordings, irrespective of how they were actually produced.

In some respects, Kania's position seems precarious, since it rests upon a listener's assumptions about what they are hearing. Even so, the fact remains that many recordings involve acts of performance. Prior to the invention of magnetic tape, for example, the vast majority of recordings featured complete, unedited performances by musicians (Chanan, 2000). Even in the digital age, individual performances may be assembled in the studio, as Kania suggests, but they still involve performances, even if merely partial. With this in mind, it seems strange to suggest that recordings are simply tokens of a work type, without considering whether performances need sit between the two. In this respect, we run into a problem: recordings vary in nature; some recordings capture live performances, others involve performative acts within the confines of a recording studio, and others are compiled, constructed or even composed exclusively within studio environments (Brown, 2000; Davies, 2004; Gracyk, 1997; Kania, 2007; Stansbie, 2014; 2015). With this in mind, one might wonder whether it is at all possible to provide a meaningful ontological position relative to their existence. Stephen Davies attempts to bypass this problem by offering a nuanced position in which various different ontological types of recording are acknowledged (Davies, 2004). This position enables him to differentiate between *musical works for live performances*, which may be recorded, *works for studio performance*, which are recorded, and *works that are not for performance*, which are entirely compiled or composed within the studio environment. In the first two cases, the works are performed and then recorded. In the final case, the work is not performed at all, but composed in the studio. Thus, Davies's position allows that *some* recordings are

9 The writings of Glenn Gould, for example, testify to some of the many ways in which multiple separate recordings were artificially spliced together to create a recording of something that was never actually performed as it appears on the recording (Gould, 1966).

tokens of a given type.¹⁰ However, this is not always the case, depending on the nature of the recording in question.

Digitisations invite remarkably similar observations, namely: digitisations cannot exist without something first being recorded, and it would seem strange to overlook this relationship by describing them as instances in their own right. With this in mind, it seems reasonable to conclude that recordings and digitisations are not simply tokens of work types. Rather, there is a significant intervening relationship which must be acknowledged if we are to explain their existence and relations. Recordings are, occasionally, instances of performances. Digitisations are, necessarily, instances of recordings. Thus, in many cases, recordings and digitisations are instances of other instances. Stepping briefly away from our ontological discussion, this observation provides an acceptable correlate with the basic grammar of recording and digitisation; recordings and digitisations are always *of something*, namely: performances and other recordings.

Possibility 2: tokens of tokens

A second possibility might be that recordings and digitisations are instances of other instances, or, to use the terminology presented above, tokens of tokens. For example, we might suggest that a given musical work is a type, a performance is a token of that type, and a recording is a token of that token. By extension, digitisations would be tokens of those tokens. Accounting for the possibility that some recordings might be studio-created, and therefore not for performance (Davies, 2004), one can represent this possibility as in Figure 3.

In this possibility, we observe something quite surprising: the one–many relationship between a work and its performances is not repeated when performances are recorded. Rather, we find a one–one relationship, in which a single performance is singularly recorded.¹¹ By contrast, a one–many relationship *is* found between a given recording and its subsequent digitisations. This is because digitisations may be conducted in many different ways according to how various decisions are made during the digitisation process. Imagine, for example, someone who tries to digitise a recording that was initially made on an early phonograph with a wax cylinder. In this case, he or she would be required to set

10 Davies's category *works that are not for performance* has been opposed. Stansbie has argued that acousmatic and electroacoustic music is often studio-created and *then* performed, effectively locating performance post-recording (Stansbie, 2014; 2015). Gracyk and Kania both argue that the same applies in much rock and pop music, for which live performances effectively ape whatever was realised in the studio (Kania, 2005; 2008; Gracyk, 1997). These two views uphold the idea that certain recordings may be seen as tokens of a given type, but question the status of the performance that follows.

11 It is, of course, possible to imagine a scenario in which a given performance is recorded in multiple different ways, with each of those released separately. Since this is virtually unheard-of in the world of recordings, it is not considered as an option at the time of writing.

up a microphone, or microphones, to capture the output of the phonograph, effectively recording a recording. In doing so, a range of decisions must be made, including: the choice of microphone(s); the choice of recording technique; the placement and proximity of the microphone(s); the placement of the phonograph in the recording space; the recording levels; the recording format and type; the choice of studio or room according to the available acoustic; among others. To make matters more complicated, numerous decisions might be made post-recording, including: changes to the digital format; reduction of captured noise or unwanted frequencies; alterations to the stereo balance; boosting or cutting the frequency or spectral balance; increasing or decreasing dynamic levels; among others. These decisions cannot be downplayed in terms of their significance, since they have the potential to radically alter the sonic material that is captured, and dramatically transform the original recording into something potentially quite different. One can easily imagine a scenario in which multiple digitisations of the same disc are rendered in vast different sonic ways.¹² If, as previously suggested, we prize variability in the context of music, then the emergence of digitisations must be looked upon favourably.

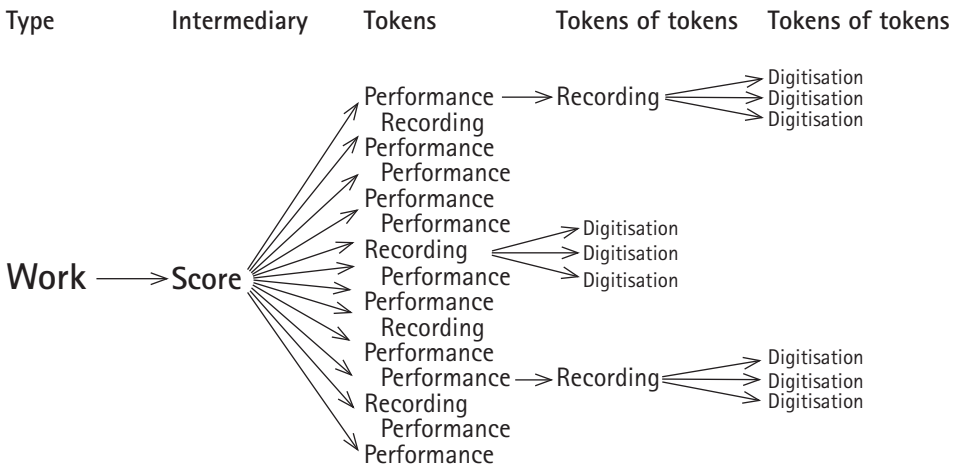


Figure 3.

This possibility neatly captures the primary relations that hold between works and performances. Furthermore, it provides additional complexity by adding relations between performances, recordings and digitisations. There is a substantial problem, however: variability among tokens was previously ascribed to the associated type. However, whilst

12 Inja Stanović's article on the digitisation of piano rolls (Stanović, 2018) offers an account of just how much variability one might discover; through an analysis of various different digitisations of the same piano roll, Stanović observes an extraordinary diversity that springs from the manifold choices that one must make in order to produce a digitisation in this context.

it seems reasonable to suggest that works are schematic, indeterminate or thin, none of these terms easily apply to recordings; even if their digitisations are widely variable, it would be meaningless to describe recordings as schematic, indeterminate formations. On the contrary, they are replete with sonic information and therefore, to follow Davies's terminology, necessarily thick (Davies, 2004). It follows that variability cannot be attributed to recordings in the same way that it might be attributed to works. With this in mind, one may reasonably question how variability appears, with two possible options: either variability must have sprung from the work itself, or it must be ascribed to each individual digitisation. The first of these options does not disrupt the idea under discussion. However, it implies that the above diagram is once again too simplistic to adequately capture the complex network of relations that hold between works, recordings and their digitisations, particularly if the work so radically informs variations among digitisations. The second of these options would fundamentally upset the idea under discussion, severing relations that hold between recordings and their digitisations. Fortunately, these complex options do not require any further elaboration, since there is a more fundamental problem requiring attention.

It was previously noted that tokens must be instances of types. Furthermore, it was stated that an intermediary must sit between type and tokens, in the form of a structural plan, set of instructions, recipe or script. The possibility that is now under discussion conveniently disregards these two prescriptions. Firstly, it allows for a token to be *of* another token and, secondly, it allows that these new tokens might be produced without recourse to an intermediary. One might reasonably object to both of these ideas; the underlying ontological implications associated with the term *token* have been ruptured when they stand in relation to other tokens and, more fundamentally, tokens cannot be produced without recourse to an intermediary. These two objections seem perfectly reasonable, when we start to recall the opening discussion; the type-token relationship invites us to think of an abstract entity that has concrete manifestations, or instantiations. In the case of the 'token of a token', we arrive at the somewhat absurd conclusion that a concrete entity (the recording or digitisation) is itself a manifestation of *another* concrete entity (the performance or recording). Clearly, this is unacceptable, since concrete entities cannot be instances of other concrete entities without disrupting metaphysical notions of spatial, temporal and numerical identity. As Scruton points out, in the spatio-temporal world, two things cannot be one thing: 'When two objects have all their properties in common, they are qualitatively identical; but if they are two, then they are not numerically identical' (Scruton, 1999, p. 101). Scruton goes on to remind us of a case that has surprising parallels with the current discussion:

Consider Hobbes's example of the ship of Theseus, the planks of which are replaced one by one until not a plank remains unchanged. Suppose now the old planks are re-assembled in their original form. Which is the ship of Theseus – the one that emerged as the result of successive repairs, or the one that is put together from the debris? It does not matter which you say – though you cannot say both. (Scruton, 1999, p. 101)

With this example in mind, it is clear that we cannot have tokens of other tokens, at least if one holds to the realist notion of types and tokens.¹³ Rather, we must look elsewhere in order to address the various relations that hold between works, recordings and their digitisations.

Possibility 3: other types, other tokens

A third possibility brings us almost full-circle, seeing a return to the familiar type–token relationship, albeit with some substantial additions. In order to understand this particular possibility, we must briefly rethink what, exactly, we mean when we use the terms 'recordings' and 'digitisations'. Let us assume, at least for the moment, that these terms actually refer to types, rather than some kind of token. Thus, a recording is a type, and so is a digitisation. This would imply, as the notion of types dictates, that recordings and digitisations are actually abstract entities in exactly the same way as musical works. Thus, we can refer to Igor Stravinsky's work *The rite of spring* as an abstract type, and so can we to Frank Zappa's recording *Hot rats*, and Marston's digitisation of Godowsky's *Columbia and Brunswick recordings*.

There are certain intuitive and, indeed, linguistic reasons for immediately accepting the notion of recordings and digitisations as types. For example, consider the sentence, 'my recording is damaged', in comparison to the sentence, 'my copy of the recording is damaged'. In the first case, we use the word 'recording' to denote a specific physical object, whereas in the second case we differentiate between that physical object and

13 There are, of course, other philosophical theories aside from the notion of types and tokens for which this particular problem would not necessarily arise. For example, nominalists viewing musical works as a set of performances might be prepared to either increase set membership, to include recordings and digitisations or, alternatively, argue for the existence of multiple sets, containing performances, recordings and digitisations respectively. The second of these options most closely aligns with idea under discussion, and suggests ways in which membership of a recording or digitisation set might rely, or depend, upon a given performance set. In this way, the nominalist might be able to point to a similar relationship between sets whilst avoiding the absurd notion of tokens that instantiate other tokens. It is, sadly, beyond the scope of this paper to fully grapple with the complexities of such a position. Criticisms of the nominalist theory are, however, so numerous and comprehensive that this idea would have little merit. Two brief points may be raised in opposition. Firstly, the conditions for joining a set of recordings or digitisations would be similar to those required for membership to a set of performances. Since Goodman's score-compliance theory has been so thoroughly debunked, the notion of set membership remains unclear. Secondly, works and performances that are yet to be recorded, and recordings that are yet to be digitised, would occupy the same (empty) set.

a type to which it relates.¹⁴ That the same two sentences work even when the word 'recording' is switched for the word 'digitisation' may, therefore, suggest that we are already capable of referring to both recordings and digitisations as types, and this would seem to support the possibility under discussion. Even so, such linguistic tendencies are, of course, often misleading, and it is worth noting that these two sentences suggest a degree of ambivalence as to whether a recording is a physical object or a type. In many respects, this ambivalence brings up something much more notable: we have a tendency to think of recordings and digitisations as physical, rather than abstract, entities and, if the current possibility is deemed acceptable, this must be addressed.

In many respects, our tendency to think of recordings and digitisations as simple physical objects is inevitable; we think and talk of recordings as entities that we can purchase, own and move about in much the same way we might a painting or sculpture. As a direct consequence, it seems perfectly valid to say 'I own the recording of that piece'. As stated above, however, linguistic tendencies are often misleading, and this is particularly true in this example; recordings are, by their nature and purpose, multiple, in the sense that they can be endlessly reproduced. This invariably means that they are not simple physical objects because, as we have already seen, one thing cannot be multiple things. Thus, one cannot own *the* recording if it is also to be found elsewhere. This point is raised by Rohrbaugh, who makes a distinction between singular and multiple works of art:

Singular artworks are unique, occurring at only one place at a time. Paintings, collages, carved sculptures, and Polaroids are typical examples of singular works. Multiple artworks are those which are capable of having more than one occurrence in different places at the same time. For example, a novel may have many copies, a play many performances, a film many screenings, and a photograph many prints. Each of the occurrences is, in some way, a full-fledged presentation of the work. This distinction appears to doom the simplest thought, that all works of art are physical particulars. It may be plausible to claim that a painting is a particular material object, or that a jazz performance is a particular physical event, but one cannot identify Alfred Steiglitz's photograph *The Steerage* with any one of its prints or Peter Schaffer's play *Equus* with any one of its performances. [...] [T]he occurrences are potentially many, and one thing cannot be identical to many distinct things. (Rohrbaugh, 2005, p. 2)

Perhaps, with this in mind, it would be more appropriate to suggest that we own a *copy* of a recording, rather than *the* recording itself. Of course, this brings up the following question: what, exactly, are they copies *of*? It would be tempting to view them as copies of a master recording which, for the vast majority of cases, is a singular entity. As tempting

¹⁴ The author is very grateful to an anonymous reviewer for highlighting this common usage in language, from which this example derives.

as this is, however, recordings can survive the destruction of the master, just as works of music can survive the destruction of an original manuscript (Thomasson, 2004, pp. 84–85). As such, it seems implausible to associate recordings with masters which, for all intents and purposes, are simply additional copies.

There is a more substantial reason for upholding a distinction between a recording, and any master or copy; recordings have a range of properties that are not shared by any of their instances, and vice versa. A similar point is raised by Amie Thomason, who rejects any attempt to associate works of art with physical objects:

We must first ask how to construe the thesis that works of art are physical objects: Is it the strong view that they are identifiable with the *mere* lumps of matter that make them up, describable *purely* in terms of physics? So stated, the view is hardly plausible – certainly it is essential to works of art as we normally understand them that they have certain intentional, meaning-oriented, and/or aesthetic properties. Yet the prospects for describing any of these properties purely in the terminology of physics seem dim at best [...] since the two may have different identity or persistence conditions (i.e. the statue can survive the replacement of one of its fingers with a different piece of clay, while the lump of clay cannot survive such changes; and the clay can survive the reorganization of its parts into a ball, while the statue cannot); or different essential properties (the statue is essentially an artifact, created or at least selected by an artist, the lump of clay is not). (Thomasson, 2004, pp. 85–86)

This view certainly seems to apply in our discussion of recordings; although one may have a certain aesthetic interest in wax cylinders, magnetic tape, vinyl discs, or other forms of recording media, these objects are not, in and of themselves, works of art. Rather, they are media intended to be played back, upon which an instance of the recording shall be heard. In this respect, there are certain parallels between the recording medium and the musical score; neither of these are *the* work of art, but nor are they instances of the work. Perhaps, one might suggest that medium is therefore an intermediary between the recording and its various instances.

In the absence of any alternative physical object, it would seem that the recording itself cannot be encountered except through its instances. These instances appear when a recording medium is played back and, since the medium itself is not an instance of the recording, we have a very similar type–token relationship to that involving the musical work. In this instance, however, the recording is a type, it has an intermediary in the form of a recording medium, and tokens are produced when the medium is played back. The same may be said of digitisations; the digitisation is a type, it also has an intermediary in the form of a recording medium (albeit one that is in the digital domain) and tokens are produced when the medium is played back. Thus, we might represent this as follows:

Type <i>Work</i>	Intermediary <i>Score</i>	Tokens <i>Performances</i>
Type <i>Recording</i>	Intermediary <i>Recording medium</i>	Tokens <i>Playbacks</i>
Type <i>Digitisation</i>	Intermediary <i>Recording medium</i>	Tokens <i>Playbacks</i>

Figure 4.

There are, of course, objections that may be raised. Firstly, the notion that recordings and digitisations are abstract types means that they must be capable of surviving the destruction of all copies of the recording medium (including the master), and therefore exist without the capacity to be played back. With this in mind, one may object to the notion of their being types on the ground that it is absurd to talk of the existence of a recording if there are no copies and no instances. This is, in actual fact, an objection to the notion of types and tokens, and the same may easily be said of musical works, which are also deemed to exist even if every score is destroyed and, consequently, performances rendered impossible. A lengthy defence of the type–token thesis is beyond the scope of this paper,¹⁵ but it is worth noting that realist philosophers would point to the existence of types, irrespective of whether their tokens have ceased to exist. Indeed, some realists point to the existence of types that are not currently, have not yet, or will never be performed or otherwise tokened (Rohrbaugh, 2005, p. 8) whilst others suggest that unlike tokens, which require a certain historical context in order to exist, types have the capacity to exist either eternally or sempiternally (Levinson, 1990).

A second objection relates to the idea of recording media as an intermediary. We previously described intermediaries as a structural plan, set of instructions, recipe or script that must be followed to produce tokens of a given type (Wollheim, 1980). For some, it may seem objectionable to describe recording media in this way, given that it cannot be effectively or meaningfully read by humans.¹⁶ There is a simple response to this objec-

¹⁵ A detailed answer to this objection may be found in the writings of Davies (2004) and Kania (2005).

¹⁶ Humans can, arguably, read certain aspects, particularly in the context of analogue media where the grooves on a record suggest higher or lower frequencies at higher or lower amplitudes. In reality, however, this information will always be too complex to be read, and it seems impossible to imagine that humans will ever start to read the binary code used in digitisations.

tion: many structural plans are to be read by machines, including those found in vehicle production lines. The introduction to this article used the Ford Cortina when explaining the relations between types, tokens and intermediaries and, in this context, there seems nothing wrong with thinking of machine involvement in the reading of an intermediary. Human capacity to read the intermediary is not a requirement for their designation.

A third objection relates to playbacks drawn from the intermediary. One might suggest, for example, that these are fixed or unchanging, and therefore essentially uniform. As such, they do not invite the same kind of one-many relationship that the type-token concept seeks to exploit. Once again, such an objection is unsustainable. There is nothing to suggest that a token must display variability. Indeed, many examples produce uniformity, such as the aforementioned minting of coins where uniformity is prized as value. Beyond this, of course, one might question whether playbacks *are* fixed or uniform; we previously introduced the idea that concrete entities have a spatial, temporal and numerical identity that is sufficient to differentiate between their existence. Clearly, two different playbacks will take place at different points in time and space and will invariably remain two. When one factors in the many differences between the circumstances involved in playback (particularly in respect of loudspeakers, acoustics, listening habits and situations) it is easy to see why the idea of fixity has been rejected (Echard, 2008).

In the absence of any more substantial objections, it seems that there are reasonable grounds for upholding the possibility under discussion. There is, however, one outstanding item that requires attention; this article set out to consider musical works, recordings and digitisations and, crucially, *the relations that hold between them*. In our current model, we have three separate types, intermediaries and tokens, but nothing that brings them together or explains the relationship between them. As such, there is a need to articulate two key relations that hold between each of these types and their respective tokens. The first relation connects the tokens of a given type with the intermediary of another. For example, a recording type is produced when an intermediary medium (digital, analogue, or other) is used to capture a performance (the token of a work type). Tokens of the recording type are then produced when the medium is played back. Along the same lines, a digitisation type is produced when an intermediary medium (digital, analogue, or other) is used to capture the playback of an existing recording (the token of a recording type). Tokens of the digitisation type are then produced when the recording medium is played back. Whilst this relation may seem relatively complex in written form, it becomes quite clear when presented in diagram form:

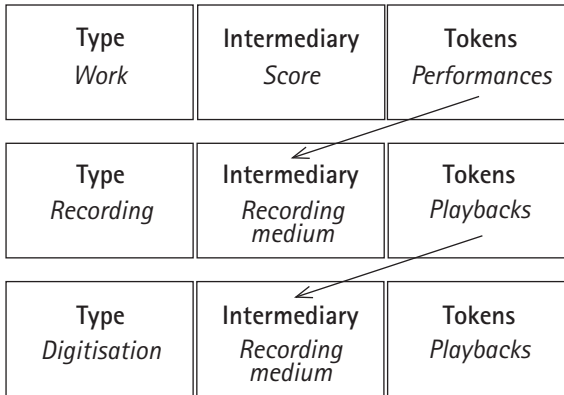


Figure 5.

The second relation between these multiple types and tokens is somewhat more complicated. This is because tokens of recordings do not merely instantiate the recording type. Rather, they instantiate the recording type *and* the work type that they are *of*. Thus, when playing back a recording medium, one shall encounter an instance of a recording, which in turn instantiates a given work. Further to this, the tokens of a digitisation do not merely instantiate the digitisation type. Rather, they instantiate the digitisation type *and* the recording type, *and* the work type. In this case, when playing back a recording medium, one encounters an instance of a digitisation, which in turn instantiates a recording, which in turn instantiates a given work. It follows from this that musical works are necessarily instantiated, whether through a performance, or a playback of a recording or digitisation. However, since works may be instantiated *without* recourse to recordings and digitisations, they occupy a primary position with the network of relations that follow. Further elaborating this idea, it would seem reasonable to suggest that recordings occupy a secondary position in the relations that follow; recordings are instantiated through a playback, or through a playback of a digitisation. However, since recordings may be instantiated *without* recourse to a digitisation, they occupy a secondary position in the network of relations. Digitisations, by contrast, are instantiated through a playback, thus occupying a tertiary position within the network of relations. Thus, we do not merely have a set of relations that hold between tokens and intermediaries within the possibility under discussion. Rather, we have ordered relations between sets of types, intermediaries and tokens. This order, rather than being presented as a series of lines or arrows, might be more reasonably presented in a sequential manner, as follows:

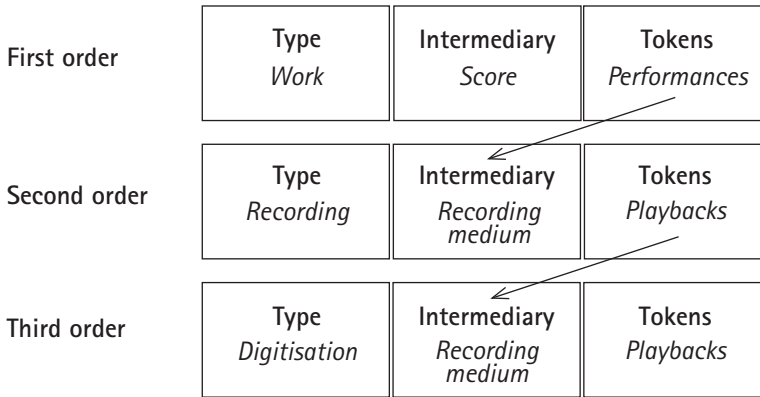


Figure 6.

Conclusion

This article set out to describe the relations that hold between musical works, recordings and their digitisations. It introduced the idea that works are types encountered in or through their various performances as tokens. It went on to consider whether recordings and digitisations are also tokens of types. This view was rejected, alongside a similar position, which considered recordings and digitisations as tokens of tokens. A final possibility was presented, including: first-order types and tokens, in the form of works and performances; second-order types and tokens, in the form of recordings and playbacks; third-order types and tokens, in the form of digitisations and playbacks. The ordered sequence has relations, in-so-far as first-order tokens are used in the production of second-order intermediaries, and second-order tokens are used in the production of third-order intermediaries. Curiously, this ordered sequence tells us as much about works as it does about recordings and their digitisations; works remain at the hub of our conception of music-making, and this extends to recordings of the past and digitisations of the present. Of course, the sequence may become more numerous as time passes; in a world of rapid technological expansion, the current digital age will surely be succeeded and, in this eventuality, we will have a new recording medium through which our old digitisations need to be captured. Since digitisations have only furthered notions of variability, there is every reason to assume that the next generation of technologies will once again admit that sphere of irrelevance that has been so highly prized in the world of music.

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Abstract

Musical works, recordings and their digitisations: new philosophical types

Over the past hundred years, philosophers of music have debated the nature of, and relations that hold between, musical works and their performances. The gradual proliferation of recording and reproduction technologies over the same period further complicated such debates, encouraging some contemporary philosophers to consider similar relations between musical works and their recordings. In recent years, profound changes in the nature of such technologies have resulted in a new phenomenon, in which recordings of the past have been transferred from their original medium into the digital domain. Responding to this phenomenon, this article assesses the relations that hold between musical works, recordings and their digitisations. It starts by surveying existing theories that relate works and performances, paying particular attention to the realist notion of types and tokens. It goes on to consider three possibilities in which this notion might be employed and adapted in order to account for existence of recordings and their digitisations. The final of these three possibilities, which is viewed as the most plausible, does not merely offer a revisionist account of ongoing philosophical debates. Rather, it argues for a radical expansion of our understanding of musical works, and addresses the complex network of relations that they enter into with regard to recordings and digitisations.

Keywords

Musical works; recordings; digitisations; philosophy; types; tokens.

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