# Preparing for Synchrony:
## The Projection of a Cue in Ensemble Music Rehearsals

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*The 2019 Conference of the International Institute for Ethnomethodology and Conversation Analysis*
*(The University of Mannheim, July 4, 2019)*

**Abstract**

The aim of this research is to elucidate the work of musicians in arranging their environment to achieve synchrony in a music ensemble. Musicians indicate the time to start playing their instruments in an ensemble setting with a cue such as rhythmic counting or breathing to attain synchrony. However, to effectively accomplish these actions, musicians are supposed to have already notified the production of a forthcoming cue by someone in the ensemble. This paper analyzed video data of excerpts taken from research that began in Japan in 2015. These audio-visual extracts focus on the scene in which musicians start positioning their instruments in response to another participant's behavior. The objective of the examination is to scrutinize the type of expressions that could possibly be recognized as projections that a cue was about to be produced. The analysis revealed the following sequential structure: [1] a projection of performance, [2] preparation of instruments, [3] a cue, and [4] performance. Thus, in this work of research, the work of musicians in arranging their environment to achieve synchrony by connecting multimodal resources such as talking, gaze, and body movement will be respecified.

### 1. Introduction

The purpose of this paper is to shed light on a method that musicians use to achieve "synchrony" in music performance. To this end, this paper clarifies one sequential structure used by musicians to initiate music performance. As will be seen, the structure consists of four parts: [1] a projection of performance, [2] preparation of instruments, [3] a cue, and [4] performance.

How is music synchronized? The problem is an important concern for musicians. Especially in Western music, disharmony in performance timing is clearly undesirable. In fact, it is fair to say that the daily practice of musicians is completed in part to avoid such disharmony in performance.

These synchronized performances are never automatic. As outlined by S. Kawase (2014), a social psychologist, research that analyzed musical performance indicated that not only musical sounds but also various multi-modalities, such as gaze and body movements, were used in the synchronization of musical performances by musicians: synchronization in performance is a constant concern.

Much of the work on musical synchrony analyzes synchronizing in performances that have already begun. However, unless there already exists a way to start playing at the same time, performers will not be able to maintain synchronized playing. In this sense, the study of synchronization in performance seems to develop by clarifying how performances can begin simultaneously.[1]

Therefore, this paper focuses on the interaction between musicians just before the start of ensemble play in the policy of ethnomethodological research (Garfinkel 1967; 2002). In this way, this paper will attempt to find a practical way to initiate synchronization.

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[1] It seems that the phenomenological sociologist A. Schutz (1951) considered music synchronization at a fundamental level. Schutz observes that synchronization in performance is made possible by what he calls a "mutual tuning-in relationship" in internal time. However, his work did not focus on what makes the mutual tuning-in relationship possible.

## 2. Previous Studies

Some of the studies related to our research focused on the interaction of musicians in a performance (Weeks 1996b; Tolmie et al. 2014). However, these studies focused on the failure and recovery of synchronization in a performance that has already started (Weeks 1996b) or involve the gradual participation of musicians (Tolmie et al. 2014). Therefore, they do not address the issue of achieving synchrony when an ensemble begins to play.

Another study focused on the overall structure of music practice activities, such as rehearsals and lessons, and found that these activities were structured by alternating "conversation" and "performance" between players (Weeks 1990; 1996a). However, these studies focused on outlining the overall structure of practice activities and do not identify the method used in the transition from conversation to performance.

Many researchers who are interested in activities such as rehearsals and lessons have focused on conversations in these practice activities (Keating 1993; Tolins 2013; Stevanovic & Frick 2014; Veronesi 2014; Ivaldi 2016; Stevanovic 2017). However, these studies focused on a sequence structure called a "correction sequence," which is used by teachers to correct imperfections in students' performances and by musicians to point out imperfections in one another's performances.

Among these studies is the work of D. Reed and others. Their work is notable for analyzing the structure of the master class (public lessons) and the transition from conversation to performance in the master class (Reed, Reed & Haddon 2013; Reed & Reed 2013; Reed & Reed 2014; Reed 2015). Reed discussed how teachers in vocal master classes project the completion of their instructions by "relinquishing" their bodies from the stage, and how such body movements are observed by pianists in vocal accompaniment to start performance (Reed 2015). Nevertheless, the availability of these relinquishing acts as projections of performance is dependent on the fact that Reed studied master class activity (if it is not a public lesson, it is unlikely that teachers will ever "relinquish" their bodies). Therefore, in order to clarify the more general mechanism of starting performance, it is necessary to pay attention to situations other than the master class.

Therefore, this paper adopts the following two policies. First, this paper focuses on rehearsals, but not lessons. In this way, the focus is placed on the scene where the collective performance is meant to start at the same time. Second, this paper focuses on the boundary between conversation and performance. This boundary reveals what is happening at the very moment the conversation ends, and the performance begins.

## 3. Data and Transcripts

Based on the above, this paper uses research data of "Ensemble Alpha" and "Ensemble Delta," which are active in Japan:

- **Ensemble Alpha**: a professional early music ensemble around the Kanto region. The research on the ensemble was conducted in March 2015. The author participated as an observer, and video data was collected through the research. Video data includes four rehearsal scenes with the conductor and musicians, such as a harpsichord player (Hp), viola da gamba player (VdG), baroque guitar player (Gt), and some singers.
- **Ensemble Delta**: an ensemble operating in the Kanto region. The participatory observational research was conducted from March to August 2015. The video data includes a rehearsal scene with three instrument players consisting of N, J, and Y (the author of this paper). The piece they are practicing is an instrumental piece of three voices from 17$^{th}$ century Italy, where N plays the violin, J plays the harpsichord, and Y plays the cello.

This paper conducts a video-based analysis. There were approximately 400 minutes of video data collected through this research, and this paper analyzes a part of that data. The video data collected by the research was transcribed using a notation system developed by G. Jefferson and refined by C. Goodwin and R. Mondada.[2]

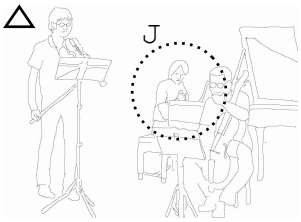
## 4. Analysis

### *4.1 Typical Case: Preparing for Synchrony*

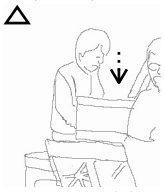
In this section, this paper first clarifies the characteristics of the expressions used immediately before the moment during which instruments are prepared. As a simple example, I present Fragment 1. The fragment is from Ensemble Delta.

*Fragment 1: Typical Case (from Ensemble Delta)*

```
01      J:   de kuzuretemo: sono- [ko(no)
             And if you lose your tempo, keep that- (this)
02     jp:                        [SNAP
03      J:   issyousetsu tani dewa [modottekuru youni
             pace and come back.
04     jp:                        [SNAP
05      N:   hai
             Yes.
             (0.6)
06 [1]  J:   chotto- +saisyo kara >yatte(ku?)<
             Shall we start from the beginning?
```




```
   [2]       +(0.3)
```



```
07 [2] yp:   +×PLAY((F note))
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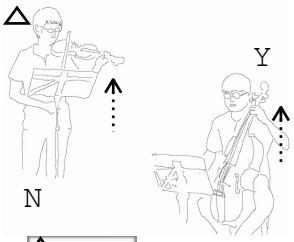
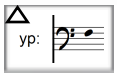
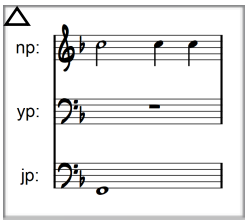



```
             (0.6)
```

[2] Transcripts are not video data itself, of course. However, this paper takes the position that by using transcripts, the experience of musicians is effectively accessible (Weeks 2002: 381-2).

```
08 [3]  N:    .h::
09 [4] jp:    [×PLAY
10 [4] np:    [×PLAY
11 [4] yp:    [×PLAY
```




Fragment 1 has the following structure. In lines 01 to 04, J gives an instruction, and in line 05, N receives it. In line 06, just after J asks, “Shall we start from the beginning?” in lines 06 to 07, N and Y raise their instruments. In line 08, N produces a breathing sound, and in lines 09 to 11, the performance starts.

The structure of Fragment 1 is summarized below.

*The structure of Fragment 1*:
J: Instruction (01-04)
N: Receives instruction (05)
[1] J: “Shall we start from the beginning?” (06)
[2] N & Y: Preparing instruments (06-07)
[3] N: Cue (08)
[4] All: PLAY (09 -11)

In this way, a very interesting characteristic can be observed in the expression, “Shall we start from the beginning?” in line 06. On the one hand, this expression appears to suggest starting the performance. On the other hand, the fact is that the proposed commencement does not occur immediately thereafter. After the proposal, there is another alternative to the “performance,” which is preparation of the musical instruments. It is important to note that the absence of immediate commencement does not mean that the original offer is rejected. In fact, the proposed commencement appears shortly thereafter in lines 09 to 11. In other words, the proposal of starting the performance has been accepted as a result. However, and therefore, it is not being answered by the initiation of the performance but by first preparing for it.

What actually starts the performance itself? If you look carefully at the place just before the actual performance begins, you can find the expression that starts the performance. It is the inspiratory sound produced by N in line 08. This intake sound is used to clarify the starting point of the performance, that is, a cue. The start of the performance is directly guided by this cue.

The course of the performance is traced by the following four elements. First, [1] performance commencement is proposed. [2] As a reaction, performers raise their instruments and prepare to play. Through this reactive and preparatory transition, musicians prepare to begin the performance. [3] One of the players then produces a cue. [4] The actual performance begins as a reaction to the cue. When this sequence is completed, the first proposal is fulfilled. The above sequential structure is outlined below.

*Sequential structure*:
[1] Projection of Performance
[2] Preparing Musical Instrument
[3] Cue
[4] Performance

The fact that there are many actions between [1] the projection of performance and [4] the performance seems to suggest the following: although the suggestion of commencement was accepted, what actually occurred was the beginning of performance preparation; this could be what is needed for the "performance" itself to begin. (If it was not needed, the musicians would have started playing directly following the suggestion. As you can see, this does not happen.)

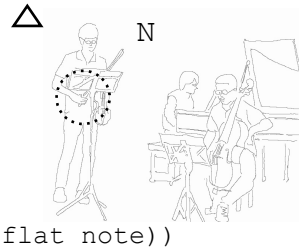
If this sequential structure is necessary to initiate the performance, the interaction should be consistently observable at various locations beyond Fragment 1. If the structure can be repeatedly observed in various places, the probability of its requirement for musicians is increased.

*4.2 Omission of Proposals*

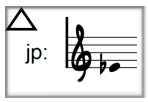
In this section, this paper shows one variation of the usage of the sequential structure that is shown above: at the last part of Fragment 2, which was obtained from the same research of Ensemble Delta as Fragment 1, projection of upcoming performance [1] is omitted, and it would remind us of the original usage of the practice.

*Fragment 2: Omission of Proposals (from Ensemble Delta)*

```
01      J:   nyuansu teki ni wa motteru Kara:
             Since it has a certain nuance,
02           sorewo:: sono aatikyureesyon(.)demo motte
             include that in your articulation,
             (0.2)
03      N:   °hai°
              Yes
04      J:   hyougen site(.)kurete
             and express it.
             (0.5)
05 [1]       etto::: sakki no toko mokkai yaru?
             Um, do you want to do it again from that point?
06 [1+2]     =sanjyuu:: +go dakke? =
              Bar thirty-five, was it?
```

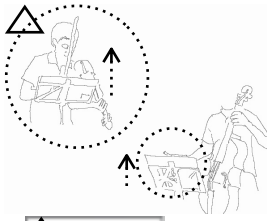


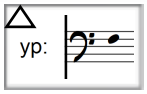

```
07 [1+2]jp:  =×PLAY((E-flat note))
```




```
             (0.4)
08 [2]   Y:  °sanjyuu go- hai°
              Thirty-five, yes.
   [2]       +(0.3)
```

09 [2] yp: +×PLAY((F note))



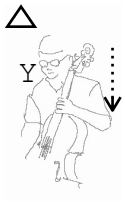



10 N: nanka
Uh,
(0.2)

11 J: doshita no
What's the matter?
(1.5)

12 N: nijyuu:
The twenty:-
(3.2)

13 nijyuu yon toka +kara
the twenty-fourth bar; how about that?

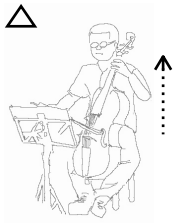



14 Y: nijyuu yon
The twenty-fourth.
(0.6)

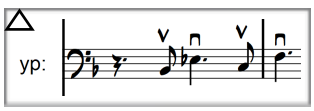
15 J: sonnani modoru ka(.) huhh
You want to go back that much, hhh.
(0.2)

16 N: °n::°
Hmm.
(0.3)

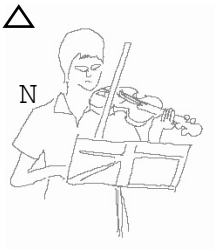
17 J: ettone(.)+[so- soko no tokoro wa]
Well, for that part,



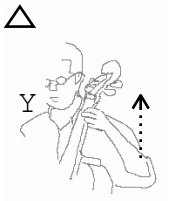
18 yp: [× PLAY ]



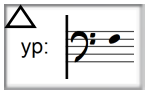
19 J: mata ato de chot[to ya]ritainde:
let’s do that a little later.
20 N: [>hai<]
Yes.
(0.3)
21 J: +un
Yeah.



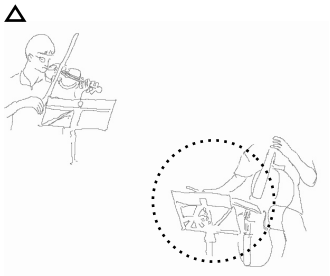

(0.5)
22 [1] N: jyaa mata sa[kki no
So, again from there.
23 [1] J: [un sakki no
Yeah, there.
24 [1+2]N: sanjyu+u [(go)
Thirty(-five).



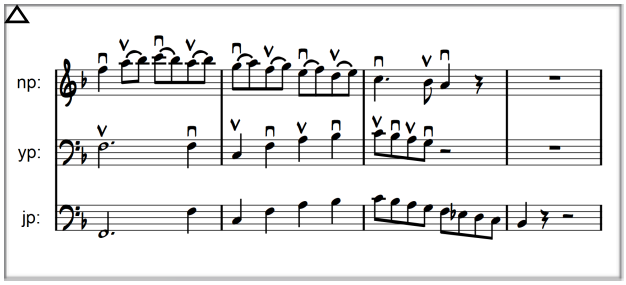

25 [2] yp: [×PLAY((F note))



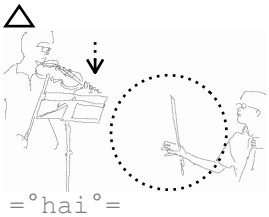

[2] +(0.7)



26 [3] N: .h:::
27 [4] jp: [×PLAY
28 [4] np: [×PLAY
29 [4] yp: [×PLAY



30 Y: +cho- chotto hayai to omou=
A li- little fast, I think.



31 N: =°hai°=
Yes.

32 J: =°un°
Yep.

(0.8)

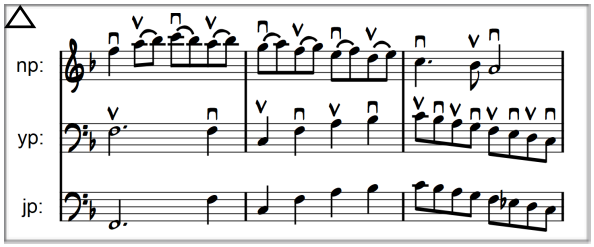
33 [2] yp: +×PLAY((F note))


34 [3] N: .h::

35 [4] yp: [×PLAY

36 [4] np: [×PLAY

37 [4] jp: [×PLAY




In three parts, I will briefly examine the structure of Fragment 2. In the first part, the musicians prepare their instruments. From lines 01 to 02 and in line 04, J gives an instruction. In line 03, N receives the instruction. In lines 05 to 07, J plays an E-flat note after asking, “Um, do you want to do it again from that point? Bar thirty-five, was it?” Immediately after, in lines 06 and 08 to 09, the musical instruments are prepared.

A cue is not produced, however. Instead, N suggests a different starting point in lines 10 and 12 to 13. In lines 15, 17, and 19, J replies to N’s proposal by stating the suggestion is worthy, but they will not presently start from that point. In line 20, N accepts this. In lines 22 and 24, N says, “So, again from there. Thirty(-five).” In line 23, J accepts the suggestion. In lines 24 to 25, the musicians prepare their instruments. In line 26, a cue is produced, and in lines 27 to 29, the trajectory is restored by the start of the performance. This is the second part.

However, in line 30, Y suspends the performance and clarifies the problem with it. In line 31, N accepts the suggestion. In line 33, the instruments are prepared again. In line 34, a cue is produced, and the performance is back on track. This is the third part.

The structure of Fragment 2 is summarized below.

*The structure of Fragment 2*:
J: Instruction (01-02, 04)
N: Acceptance (03)
[1] J: Do you want to do it again from that point? +Bar thirty-five, was it?+PLAY ((E-flat note)) (05-07)
[2] Preparing Instruments (06, 08-09)
    N: Suggest a Different Starting Point (10, 12-13)
    Y: Express Doubt of the Starting Point + yp: PLAY (14, 18)
    J: Mark as Inappropriate +Acknowledge the need to do that, but tell N not to do it now (15, 17, 19)
    N: Accept (20)
    J: Complete (21)
    [1] N: So, again from there. Thirty (five); J: Yeah, there. (22, 24; 23)
    [2] Preparing Instruments (24-25)
[3] N: Cue (26)
[4] PLAY (27-29)
    Y: Clarify Performance Issues = Indicate Slow Playing (30)
    N: Receive (31)
    J: Acceptance (32)
    [2] Preparing Instruments (33)
[3] N: Cue (34)
[4] PLAY (35-37)

This fragment appears to have a different sequential structure than the one seen in Fragment 1 because it does not contain a projection to play [1]. This occurs just before line 33. Note that in lines 05 to 07 and 22 to 24, there are [1] proposals to start playing, though it can be observed that there is no proposal immediately before line 33. Should such an irregularity in line 33 be considered an exception to the sequential structure?

In fact, there seems to be a good reason for this anomaly to take place. One noteworthy point is that the instructional activity just before line 33 was started with the interruption of the active performance and is carried out with a repair of the performance that had already started. As such, this instructional activity should not threaten the already defined starting point of the performance or the fact that it was ready to begin. This contrasts with the fact that a repairing activity, initiated to propose an alternative to the previously proposed starting point (lines 10 and 12 to 13), must propose an original starting point again at the completion (lines 22 and 24). In summary, the sequential positions allow the omission of [1].

Contrary to its appearance, this "anomaly" seems to reinforce the plausibility of the current sequential structure being used in practice. That is, Fragment 2 is seen as an example of how [1] is originally used by showing a situation in which [1] is not required.

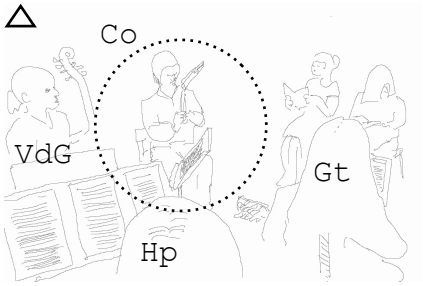
### *4.3 Deviant Case: Playing a Joke on the Conductor*

In this section, this paper shows a deviant case of the practice. In the following fragment, a musician plays a joke on a conductor, and this activity is organized by producing a variant of the sequential structure that this paper tries to elucidate. This demonstrates not only that this sequential structure is observable as a pattern, but also that it is actually referred by musicians.

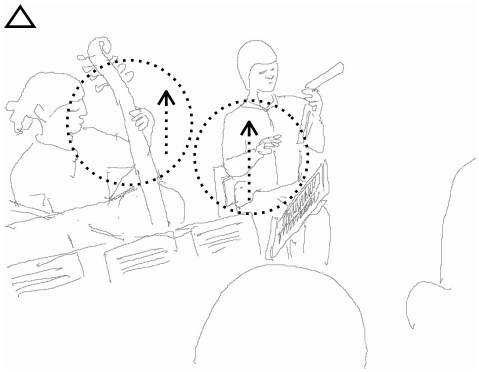
Fragment 3 is obtained by the research of Ensemble Alpha. Participants in this fragment are practicing some French baroque tunes for an upcoming music concert. Fragment 3 starts just after the conductor of the ensemble appears at the rehearsal, which started around 90 minutes before his arrival (according to the conductor's excuse, he took a wrong train). When the conductor arrives, musicians stop playing music and laugh at him. While the conductor starts to prepare for his conducting by arranging his music score and music stand, other participants try to start playing without the conductor to make fun of him.

*Fragment 3: Deviant Case (from Ensemble Alpha)*

```
01      Un:    .H haha
               (0.5)
02             [Hh
03      Gtp:   [PLAY[PLAY[PLAY
04      Un:          [(nani machigaeten no)
                      What is wrong with you?
05      Hp:              [+jyaa, mou tekitou ni hajime cha(tte.)=
                           Then, will you start it accordingly.
```




```
06 [1] Gt:    =tekito ni hajime chai mashou.
               Let's get started accordingly.
07 [2][3]     +ann du turowa.
               Un, deux, trois.
```



```
08 [4] Hpp:  [PLAY
09 [4] Gtp:  [PLAY
10 [4] VdGp: [PLAY
```

Fragment 3 has the following structure. In lines 01 to 02 and 04, one of the singers is laughing at and playing a joke on the conductor (Co), who has arrived late at the rehearsal. During the utterance, the guitar player plays a music phrase from her music sheet in front of her, and by doing this demonstrates to other players that she is ready to start the upcoming performance. In line 05, the harpsichord player says, "Then, will you start it accordingly," before the conductor has prepared his music stand. In line 06, the guitar player replies by saying "Let's get started accordingly" and projecting that a performance is upcoming. In line 07, the guitar player starts counting in French.[3] At the same time, the conductor starts to conduct and the viola da gamba player moves to prepare her instrument by moving her bow just at the moment the count has started. In lines 08-10, all the players (the guitar player, harpsichord player, and viola da gamba player) start playing music.

The structure of Fragment 3 is summarized below.

[3] This is because the song they are going to play is written by a French composer.

*The structure of Fragment 3*:
Un: Chatting (01-02, 04)
Gt: Preliminarily Playing (03)
Hp: Requesting (05)
[1] Gt: "Let's get started accordingly" (06)
[2] Co & VdG: Preparing (07)
[3] "Un, deux, trois" (07)
[4] All: PLAY (08-10)

The distinguishing feature of this fragment is that the guitarist who produced [1] a projection of performance appears to produce [3] a cue without waiting for [2] a preparation of performance by the conductor. This has allowed her not only to expel the conductor from the initiation process of starting to play music but to make it clear to all participants that she has expelled him. In other words, she is making fun of a conductor who has arrived late at the rehearsal.

Additionally, there seem to be two things of note in this fragment. First, both the conductor and the viola da gamba player are ready for the performance to begin. This will remind us once again that the utterance in line 06 is available as a projection of the beginning of the performance. Secondly, the joke by the guitarist was supported by the understanding that [1] a projection must be followed by a time to wait for [2] the preparation to be completed. This reminds us of the fact that [2] the preparation is being used as a transition time to prepare for the ensemble.

In Fragment 3, the guitarist is making fun of the conductor, and this teasing is accomplished by producing the "variant" (Coulter 1983) of the sequential structure that this paper focuses on. The production of the variant not only has its reflexivity with the scene but also enhances the certainty that the sequential structure is actually being used by musicians.

## 5. Discussion: From Instructions to Performance

Through the above work, the sequential structure of the boundary between instructions and performance in an ensemble has been clarified. It has the form of [1] projection of performance, [2] preparation of instruments, [3] a cue, and [4] performance. Also, as shown in the analysis of Fragments 2 and 3, this sequential structure is ubiquitously used.

What rational properties does this structure have in music practice? Performance, especially ensemble performance, is an activity one cannot start on one's own because it requires synchronization. What this means is that there needs to be some kind of agreement before the music can be properly played. The structure identified in this paper appears to be available for such consensus building. That is, the structure can be used as a *sequential* order to prepare for the *temporal* order of synchronization of a performance.

This study also clarified a more general technique for initiating a performance compared to previous studies (cf. Reed 2015). These findings can also be used to develop an existing conversation analysis of music practice (cf. Keating 1993; Tolins 2013; Stevanovic & Frick 2014; Veronesi 2014; Ivaldi 2016; Stevanovic 2017), performance analysis (cf. Weeks 1996b; Tolmie et al. 2014), and analysis of the overall structure of practice activities (cf. Weeks 1990; 1996a) by identifying a method for transitioning from instruction to performance.

## 6. Conclusion: From Conversation to Music

By focusing on the beginning of a musical performance, this paper reveals one practical method that can be used to initiate synchronization in music.

One of the highlights of this paper's analysis is that the synchronization is prepared *before* it occurs. This fact shows that the foundation of synchronization is extended beyond the synchronization itself: the

research on many other phenomena with synchronization, such as dance, plays, and so on, can be deepened by this paper's analysis; researchers with a theoretical interest in synchronizing music may also be able to deepen their discussion of the conditions under which synchronization occurs by extending their observations to the interactions that occur just before the synchronization begins (cf. Kawase 2014).[4]

Most importantly, the structure shown in this paper is the *actual* structure that the musicians are working on. In this sense, this paper presents not only how synchronization can be initiated but also what challenges synchronization poses in the first place and what practical approaches are being taken to address these challenges. In other words, the small sequential structure used by musicians reminds us of the position of synchronization in our everyday life (Garfinkel 1967; 2002).

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[4] The same may be said of Schutz (1951).