

# How much do jazz players share understanding of their performance? A case study

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To what extent do collaborating musicians need to understand what they are doing in the same way? Two experienced jazz musicians who had never previously played together improvised a jazz standard three times on either side of a visual barrier, and were then interviewed separately about the performances and their musical intentions. Two months later, the performers listened to the recordings and rated the extent to which they endorsed each statement. Performers endorsed statements they themselves had generated more often than statements by their performing partner or an outside expert. The high quality of the performances combined with the disparities in agreement suggest that, at least in this case study, fully shared understanding of what happened is not essential for successful improvisation.

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When musicians collaborate, they predict, perceive, and react to what their partners do in complex ways (see, e.g., Clayton, 2005; Davidson and King, 2004; Goebel and Palmer, 2009; Keller and Appel, 2010; Kirschner and Tomasello, 2009; Luck and Sloboda, 2009; among many others). To what extent and in what ways do they need to share understanding of what they are doing? There must be at least some intersubjective agreement if musicians are to follow a shared rhythm and create a plausible joint performance, but must everything be agreed upon?

The aim in this case study was to explore the extent to which a pair of experienced jazz musicians understand what they have done together in the same way: whether they spontaneously generate the same descriptions of their performances and intentions, and when they do not, whether they agree with their partner's characterization of what happened and what was

intended. The methodological approach was to collect immediate retrospective accounts by performers after their performances, and then to examine the extent to which either party endorsed the statements made by the other, as well as statements made by an expert listener (see Gottman and Levenson, 1985, and Ickes et al., 1986, for examples of this approach in other domains of interaction).

## METHOD

### Participants

The participants were a professional jazz saxophonist and a professional jazz pianist who had never previously met. Both were male and in their 20's; both had graduated from the same jazz conservatory at different times, and both regularly perform in New York City. They were each compensated \$100 for participating on two occasions.

### Materials

*Day of performance.* A list of potential pieces for performance was generated consisting of 9 jazz standards that the performers might feel comfortable improvising with an unfamiliar partner. Tunes were selected in order to be (a) challenging enough to keep the interest of two good players through three interpretations; (b) flexible enough to provide a range of improvisatory options, for example having common alternate chord changes and not traditionally being played in a single standard key; and (c) common enough so that both performers would be likely to be comfortable playing them. The list (*Here's That Rainy Day, Embraceable You, It Could Happen to You, You Stepped Out of a Dream, How Deep is the Ocean, Green Dolphin Street, Day by Day, If I Should Lose You, Old Folks*) was on two sheets of paper, with the instruction "Please circle the tunes you know well enough to feel comfortable playing in a duo context with a very good jazz saxophonist" (or "pianist").

Audio recordings of the performances were burned to CD and immediately provided for presentation to the players on a laptop during the interviews.

A set of prompt questions and interviewing suggestions was visible to both interviewer and performer throughout the discussion. One set of prompts was intended to stimulate general discussion from memory about the differences between the performances; these included questions like "How would you describe the differences in the three performances you two just gave?", "Were there any moments that you had trouble playing together?", and "Did you feel

that someone was in charge, and did this change during your performances?”. Another set of prompts was intended to focus commentary while listening (potentially multiple times, with stops and starts controlled by the performer being interviewed) to the recordings that had just been made; these included questions like “What do you think worked and what didn’t?”, “How did you know what to do next?”, and “What did your partner do that struck you as particularly interesting or notable?”.

*Retrospective rating.* A questionnaire was constructed consisting of statements made about the performances by the performers themselves in the interviews immediately after the performances (70 by the pianist and 34 by the saxophonist) as well as 64 additional statements made about recordings of the performances by a jazz saxophonist who is a faculty member at a jazz conservatory. Of the collection of statements, 14 could be seen as alternate versions of the same claim made by more than one party, with 4 statements made by all three parties; this resulted in 151 unique statements that could be rated. The statements were anonymized and made consistent so that the original author of the statements could not be ascertained and to point to the moment in the recording that the performer was discussing; for example, “I was playing a bass part” was transformed into “At about 4:08 the sax plays a bass part.” Of the 151 statements, 33 were made about one performance but could in principle apply to any of the three performances (e.g., “The overall performance was standard or ‘vanilla’”), 4 were general statements about the players and performances (e.g., “My partner’s signals were very clear”), and 114 could only apply to one performance (e.g. “Just before about 0:28, the sax was waiting for the piano to play the tonic as a cue to start the melody”).

The questionnaire presented each statement to be rated on a five point scale from Strongly Disagree (1) to Strongly Agree (5). The questionnaire consisted of five parts: (a) general statements about players and performances; (b) statements that could apply to more than one performance; (c) statements that concerned just one performance; and (d) questions about the experience of completing the questionnaire (e.g. “Did you find yourself remembering how you felt at the time or thinking about how you feel about things now when listening or a bit of both?”). For statements in (b), the questionnaire asked raters to rate the extent to which they endorsed each statement for each of the three performances, so that the questionnaire ended up requiring 215 separate ratings of the statements about the performances.

The statements in parts (a) and (b) were presented in a random order and the questions in part (c) were presented in the order corresponding to the moments in the recording to which they applied.

### **Procedure**

*Day of performance.* Throughout the day, the performers never met each other, saw each other, or heard the other speak; they entered and exited and they were briefed and debriefed entirely separately.

After the performers entered the experiment room, which was a New York City performance space at a jazz conservatory, they were seated on either side of a visual barrier (with the piano on one side) and then asked to select (on paper) which standards they would be comfortable performing (see Materials). The experimenter selected “It Could Happen to You” from those on the list that overlapped, and then presented instructions to both performers simultaneously. The performers were asked to improvise three versions of “It Could Happen to You” that should be different from each other and that should each last about 5 minutes and be separated by silence; the performers were never to speak to each other at all, neither before, during or after the performances. The performances were audiorecorded and immediately burned to CD.

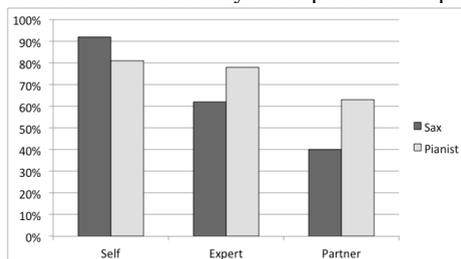
Immediately after the performances, each player was interviewed separately by different interviewers about the three performances using the prompts (see Materials), first from memory and then while listening to recordings of the performances. The interviewers’ task was to elicit detailed and specific commentary that addressed the target questions, in whatever way seemed appropriate for each performer, eliciting as many statements clearly tied to specific moments in the music as possible. The interviews took about one hour each, and they were audiorecorded for subsequent use.

*Retrospective rating.* Two months later, the performers were provided access to the three recordings and paper-and-pencil hardcopies of the questionnaire, for them to fill out at their convenience in a quiet place alone, without interruption. They were instructed to listen to each recording at least once with headphones before responding, and that they could listen to each recording, with starts, stops and rewinds, as often as they liked in order to provide accurate ratings. They were told that we were interested in their responses as they listened to the recordings *now*, and that this was not

intended to be a memory test of how they felt at the time of recording. Both performers returned the questionnaires within a week; they reported having taken about an hour each to complete the questionnaires.

## RESULTS

As Figure 1 shows, the performers both endorsed statements they themselves had generated more often than those by the expert or their partner.



*Figure 1.* Percent of statements originally made by self, expert, and partner that the pianist and sax endorsed (4 or 5 on the 5-point scale).

At one level of abstraction there was broad agreement between the players. For example, for the 33 statements that could apply to more than one performance, the performers agreed on the rank ordering of the three takes for 11 of them, and for another 16 if we count one party's tied ranking as agreement with the other's distinction.

But closer inspection reveals some surprising discrepancies. Of the 217 separate ratings, players differed by 2 or more rating points on 62 of them (28.5%), and by 3 or more on 24 (11%). The statements with the most disagreement included not only judgments of quality of one party's performance ("The pianist's opening was excellent"; "The pianist's chord at about 1:23 didn't work") or the ensemble ("This was not the best performance"), but also assessments of the nature of the collaboration ("During these two choruses starting at about 1:22 the sax hears and uses the pianist's substitutions") and even basic facts about what happened ("At about 2:21, the sax started a phrase on B flat").

## DISCUSSION

It is of course unclear whether the discrepant ratings reflect true disagreement rather than different interpretations of what the same statement means, or different interpretation of how a statement applies to a

particular performance. Nonetheless, the high quality of the performances combined with the disparities in agreement suggest that, at least in this case study, fully shared understanding of what happened is not essential for successful improvisation. Also, the fact that the performers endorsed an expert listener's statements more than (some of) their partner's suggests that the performers' interpretations may not be privileged relative to an outsider's, at least in some aspects.

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