Audience Members' Perspective-Taking Predicts Accurate Identification of Musically Expressed Emotion in a Live Improvised Jazz Performance

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Abstract: This paper introduces a new method for assessing how audience members and performers feel and think during live concerts, and how audience members' recognized and felt emotions are related. Two hypotheses were tested in a live concert setting: (1) that audience members' cognitive perspective taking ability predicts their accuracy in identifying an emotion that a jazz improviser intended to express during a performance, and (2) that audience members' affective empathy predicts their likelihood of feeling the same emotions as the performer. The aim was to stage a concert with audience members who regularly attend live jazz performances, and to measure their cognitive and affective reactions during the performance as non-intrusively as possible. Pianist and Grammy nominee Andy Milne agreed, without knowing details of the method or hypotheses, to perform a full-length solo improvised concert that would include an 'unusual' piece. Jazz fans were recruited through typical advertising for New York City jazz performances. The event was held at the New School's Glass Box Theater, the home of leading NYC jazz venue 'The Stone.' Audience members were charged typical NYC jazz club admission prices; advertisements informed them that anyone who chose to participate in the study would be reimbursed their ticket price after the concert. The concert, held in April 2018, had 30 attendees, 23 of whom participated in the study. Twenty-two minutes into the concert, the performer was handed a paper note with the instruction: 'Perform a 3-5-minute improvised piece with the intention of conveying sadness.' (Sadness was chosen based on previous music cognition lab studies, where solo listeners were less likely to select sadness as the musically-expressed emotion accurately from a list of basic emotions, and more likely to misinterpret sadness as tenderness). Then, audience members and the performer were invited to respond to a questionnaire from a first envelope under their seat. Participants used their own words to describe the emotion the performer had intended to express, and then to select the intended emotion from a list. They also reported the emotions they had felt while listening using Izard's differential emotions scale. The concert then continued as usual. At the end, participants answered demographic questions and Davis' interpersonal reactivity index (IRI), a 28-item scale designed to assess both cognitive and affective empathy. Hypothesis 1 was supported: audience members with greater cognitive empathy were more likely to accurately identify sadness as the expressed emotion. Moreover, audience members who accurately selected 'sadness' reported feeling marginally sadder than people who did not select sadness. Hypotheses 2 was not supported; audience members with greater affective empathy were not more likely to feel the same emotions as the performer. If anything, members with lower cognitive perspective-taking ability had marginally greater emotional overlap with the performer, which makes sense given that these participants were less likely to identify the music as sad, which corresponded with the performer's actual feelings. Results replicate findings from solo lab studies in a concert setting and demonstrate the viability of exploring empathy and collective cognition in improvised live

Keywords: audience, cognition, collective cognition, emotion, empathy, expressed emotion, felt emotion, improvisation, live performance, recognized emotion

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