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“We got so much better at reading each other’s energy”: Knowing, acting, and attuning as an improv ensemble

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ABSTRACT

Background: Long-form dramatic improvisation has been investigated as an accomplishment of emergent creativity among an ensemble of “players,” focusing on how the group achieves “group flow” in performance.

Methods: This article employs ethnographic methods (focus group, interviews, and video-assisted self-interviews) to investigate the case of a musical theater improv group. The analysis focuses on how the group describes its shared modes of knowing, drawing on the group’s history and their interpreted enactment of these modes in an improvised scene.

Findings: Improvisation in this group requires two inter-related forms of knowing: Shared Social Practice (SSP) and Collaborative Affective Attunement (CAA), where SSP involves definable repertoires, resources, conventions, and techniques, and CAA involves affective sensibility of in-the-moment responding, or affective attunement. These two forms of knowing develop over the course of a group’s history and are entangled in complex ways over the course of performance.

Contribution: Through a case study of a musical theater improv ensemble, the paper contributes to ongoing efforts to theorize the relationship between embodied experience, social practice, and affect in group knowing with special consideration for the significant role of collaborative affective attunement.

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Long-form dramatic improvisation (“improv”), a theatrical art form in which actors perform spontaneous, unscripted shows as an ensemble, is

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currently experiencing a surge in widespread popularity (Wasson, 2017). Many improv shows begin when an improviser (“players,” in improv parlance) asks for a suggestion from the audience to inspire the improvised scene or scenes that follow. After receiving the suggestion, which might be a word, phrase, memory, sound, physical movement, or recalled dream, the players create a set of unscripted scenes that last anywhere between 20 minutes and 2 hours (Tanner et al., 2021). Given that these shows are entirely improvised, the possibility for failure—that is, that a group might perform an incoherent, un-funny, or otherwise unsatisfying show—looms large. As Sawyer (2006a) observed, “even the best groups, filled with extremely talented actors, fall flat much of the time; a brilliant performance on Friday night might be followed by a dud on Saturday” (p. 32). Yet when an improv show goes well, when actors spontaneously coordinate their actions to perform vibrant stories within rich dramatic worlds discovered entirely in-the-moment, audience members and actors alike describe the experience as a singular sort of magic (Seham, 2001; Veenstra, 2009).

Experienced improv artists describe scene and character creation as an intentional, affective, and emergent practice—located in the histories of their relationships to other players and to the practice, to their unfolding understanding of the scene, and to their felt sense of collaborative movement. The following excerpt from an interview with an advanced improv artist, “Brandon,” (all names are pseudonyms) demonstrates some of the qualities of the process of the co-creation of character, scene, and action:

Just the other night. . . my scene partner was on stage, and she was holding something out in front of her. I didn’t know what it was . . . we probably spent a good minute, maybe a minute and a half, without identifying what it was, but gaining fear of it. And it turned out it was a lemon. And I was scared of the lemon, because I didn’t like the way it stared at me with its one eye. And she was just trying to get me to be a grown man, because how are we gonna have a lemonade stand without lemons? And then at one point the lemon—you know, another person in the group—stuck his head up on her hand and became the talking lemon, and was threatening me, but showing her how nice he was, you know? That two-faced sort of deal. That was a lot of fun, it was very simple, you know. Fear got brought in, to me, by the way she was postured. It was the way she was holding whatever it was that she had. It looked like she wasn’t 100% comfortable with it, or maybe wasn’t 100% comfortable with me . . . and so I decided to absorb all the fear and take low status, let her have high status, and be afraid of whatever it was. And she’s the one that identified it as a lemon . . . and that was perfect. And I was her husband, and so the relationship came right out of that—the relationship and what it was came right out of that initial posturing and taking our time to really settle into what it could be. The relationship came almost hand in hand with identifying the lemon. Fear came first.

In this scene description, and from our analysis of our data, it is evident that the players are displaying particular learned practices, repertoires, and structures of dramatic improvisation, which we might broadly label “social practices” of improv. For instance, Brandon’s partner demonstrates “object work” in holding an object convincingly; she takes up an embodied character-influencing posture with meaning; she and Brandon wait a long time in the silence of the scene (a very difficult feat for beginning players); a third actor pops his head into the scene and takes on the character of the lemon (a classic comic move of object personification), and Brandon does “status work” as a cowering husband to the lemon. Other taught and seasoned social practices from improv are evident in the scene as well.

Yet, in addition to these learned and partially identifiable social practices at play in the scene, there is also a great deal of attunement to one another among the players. For example, Brandon and his scene partner spend a long time in the depicted scene just sharing a feeling that seems to collect and accrue. As Brandon notes, there seems to be first curiosity to the object, and then there was “gaining a fear of it.” After Brandon and his scene partner collaboratively entered into a feeling of fear, the identity of the object emerged, and later, the identity of the relationship to the scene partner. As Brandon interprets, “the relationship came almost hand in hand with identifying the lemon. Fear came first.”

Like other researchers of collaborative or improvised performance, knowing, and learning (Linson & Clarke, 2017; Ma & Hall, 2018) we find the complexity and unplanned dexterity of the “lemon scene” compelling and intriguing together phenomenon, and in dialogue with the growing line of research into group learning and creativity (Pierroux et al., 2022). We are inspired by Sawyer’s (2003, 2015) notion of “group flow” as a way into thinking about the group performance as a heightened sense of group consciousness, where creativity is thriving. However, while Sawyer (2015) enquires about the conditions for group flow to happen, we ask about the nature of knowing: What kind of knowledge does an experienced improvisation group have that enables it to create and perform scenes with a heightened sense of capacity? How does an improvisational ensemble describe its shared ways of knowing? More specifically, how can we characterize the relationships between situated social practice knowledge on the one hand, and affective, felt group sensibilities on the other hand? We study these questions by investigating the experiences, group responses, and individual performance responses by the members of one improv ensemble.

Background and theory

Group improvisation

Corresponding to the growing widespread interest in improv, an emerging line of research seeks to explain how entirely improvised scenes are accomplished among a group, or “team” (Drinko, 2013). Theatrical improv is of interest to scholars of group creativity and dynamics, who investigate how artists coordinate their actions with other performers to create a satisfying show (e.g., Sawyer, 2003, 2006a). Much of this work focuses on the ways improvisers apply the philosophy and practice of “yes-and” among an ensemble, which requires players to affirm and add to contributions made by other players over the course of a scene (e.g., Crossan, 1998). Particular fascination has been provoked by a phenomenon that improvisers refer to as “group mind” (also “groupmind”). Improvisers sometimes report the experience of accomplishing “group mind” in rapturous, even mystical tones. Performing in group mind is “magical, unbelievable,” even “the best high ever . . .” as each member of the ensemble begins to pursue the same goals through intuitive, even unconscious action (Veenstra, 2009, p. 81). The “perfect” accomplishment of groupmind is likened to “*the zone or flow* . . . akin to perfect teamwork in sports or even great sex” (Seham, 2001, p. xxv, emphases original).

Yet a more critical view of groupmind is also presented by Seham (2001), who has argued that the art of improvisation has long been dominated by white, male players. Too often, she explained, the hallowed “groupmind” accomplished among professional improv players chiefly reflects the minds of white, heterosexual males (Seham, 2001). Only fairly recently has improv become more widely available to and practiced by BIPOC, women, openly LGBTQ+ players, and other minoritized groups (Seham, 2016). The ways that social differences and stratifications of power influences improvisers’ capacity to improvise together is not the focus of the present study. However, in what follows, we do consider some ways that variation among players’ histories and identities—here, specifically in relation to religious heritage—might become relevant as improvisers strive toward groupmind.

Our interest in the concept of the folk theory of “groupmind” and the psychological and social theory of “flow” is founded on our inquiry into improvisers knowing how to collaboratively perform at an optimum level. Psychologist Mihaly Csikszentmihalyi theorized “flow” (e.g., Bermant, 2013; Nakamura & Csikszentmihalyi, 2014) as a kind of heightened consciousness or sensation that arises while fully immersed in the task at hand. While in a flow state, “. . . action follows upon action according to an internal logic that seems to need no conscious intervention by the actor. . . there is little distinction between self and environment; between stimulus and response; or between past, present, and future” (Csikszentmihalyi, 1975, p. 36).

Dramatic improvisers' experiences of groupmind exemplify what Sawyer has theorized as "group flow" (Sawyer, 2003, 2006b), or the conditions for the closely related phenomena of collaborative emergence (Sawyer, 2012). Group flow is an emergent property of a group, accomplished through interactions among its constituent actors. It is irreducible to the mental or emotional state of any individual group member (Sawyer, 2015). However, while Sawyer's (2012) analysis of group flow is more concerned with the contextual and social *conditions* that create group flow (extending Csikszentmihalyi's concepts of flow "state" and optimal conditions), presently we consider how creating group flow involves certain ways of knowing and forms of knowledge by and within the group. In fact, many of Sawyer's "conditions" can be readily described as ways of knowing, including knowing how to create equal participation (p. 40), and forms of knowledge, including "tacit knowledge" about improv practice (e.g., "show, don't tell," p. 41), or a repertoire of group "riffs" (p. 41). Still other conditions describe ways of knowing that are more connected to emotion or affect, such as having "feelings of competency, autonomy, and relatedness" (p. 38).

In this paper, we study how a group of improvisers describes how they improvise as an ensemble, and especially how they describe their knowing and doing at a high level of performance, which we associate with group flow. We expand and contribute to the concept of "group flow" in ways that highlight its affective dimensions, while situating affective dimensions within the lived knowledge and experience of shared social practice. At the same time, we want to hold onto the unique energy and experience of group flow, including the ways in which groups may operate at a subconscious level. In order to further set up this inquiry, we briefly synthesize some relevant literature on the entanglement of knowing and affect, on embodied group activity and affect, and on affect attunement.

The entanglement of knowing and affect in social practices

The complex relationships between knowing and on the one hand and affect or emotion on the other have been of interest to learning scholars for decades. Vygotsky theorized these interconnections, arguing against a passive conception of emotion (1987; cf. Bakhurst, 2007; Mesquita, 2012). Relatedly, through a sociocultural approach, Roth (2007) conceived of emotion as a "constitutive element" of activity (p. 45). Relatively recent work in the Learning Sciences is contributing more theory, insight, and analysis to the entanglements of knowing and feeling. These developing perspectives are distinct from accounts that consider affect as a more general psychological construct (e.g., Pintrich, 2003), even while these developments build on such earlier work. Jaber and Hammer (2016), for example, present a case study data of Sandra, a Hispanic American middle school student, arguing that

affect and emotion are inherent in Sandra's passionate disciplinary engagement in science. The researchers forward the concepts *epistemic affect* and *epistemic motivation* "to refer to feelings and drives connected to epistemic experience and objectives in the doing of science" (p. 161). While Jaber and Hammer (2016) recognize that some forms of affect and motivation are not epistemic, they focus on the less developed understanding of the entangled experience of knowing and feeling (cf. "emotional configuration," Vea, 2020). Jaber and Hammer (2016) also make an important distinction between "feeling within" the practice of science rather than Sandra's "feelings about" science. This insight helps us frame our concept of affect within emergent, everyday practice, rather than thinking about affect only as a form of "pre-knowing" (motivating disciplinary knowing or social practice) or "para-knowing" (generalized apart from the experience of knowing). While our own focus on dramatic improvisation is distinct from science knowing in many ways, we draw from these insights about the entangled, complementary, and complex relationships of knowing and feeling across domains of social practice. Finally, in recent studies on affect and emotion, scholars in the Learning Sciences (Ehret & Hollett, 2016; Sakr et al., 2016; Vea, 2020) have begun to consider how affect and emotion are both constitutive forces and learning outcomes in their own right. While our present focus is different from the learning of affect (or emotion), such studies lend support to the position that forms of "affective know-how" (Ehret & Hollett, 2016) are entangled with and drivers of other forms of know-how across a range of social practices and collaborative learning processes (Kumar et al., 2020).

Social practices and affective knowing in group collaboration

A growing line of research on group activity, learning, and knowing has found participants' affective stance (Goodwin, 2007) and emotional states play a constitutive role in groups' enactment of specialized, disciplinary or social practices. To understand how group knowledge is accomplished, Bird (2014) considered the coordination among the crew members required to successfully port the U.S.S. Palau, made famous in Hutchins's (1995) *Cognition in the Wild*, which required that distinct tasks be carried out by the crew members at particular times synchronized with human and non-human actants (e.g., sextants, alidades, and cockpit dials). Yet the group performance of this epistemic knowledge also required "sufficient social glue" or "cohesion [and] solidarity" as participants engaged in practices which no individual member knew how to accomplish alone (Bird, 2014, p. 15). Social cohesion necessarily means that group members pay attention, respond to, and, at times, moderate or intensify, shared energies or emotions circulating throughout and driving group activity (Nasir & Hand, 2008; Vea, 2020).

Particular forms of group knowledge require members to interweave affective and epistemic competencies. For skilled high school basketball players, a crucial element of the skills required of them to perform their roles on a team (e.g., defense, rebounder) included their abilities to respond to other players' shifting affective tones and drives, including the capacity to keep others calm, inspire teammates to maintain energy or "push," to function at times as a soothing "rock," and during others as a cheerful, animating presence (Nasir & Hand, 2008). Similarly, affect and knowledge are entangled in "ensemble learning," in which groups learn to do something no individual could do alone. Such learning requires the complex coordination between members' bodies, movements, environments, and materials with sporadic or simultaneous sensitivity and adjustment to other members' shifting affective states (Ma, 2016), as was the case with a high school marching band enjoined by their coach to perform configurations of choreography and musical expertise with their "hearts on fire," with the goal to "touch the hearts" of the audience members (Ma & Hall, 2018).

In many cases, affective know-how (Ehret & Hollett, 2016) is mediated through racialized, gendered, and classed social structures and identities of group members. Black and Latinx-identifying student Denise's history of feeling "othered" in white-dominated STEM spaces made her reluctant to join her high school's predominantly white, male robotics team, where her alternating experiences of excitement and disempowerment unevenly fueled and impeded her development of the forms of knowing and sensing necessary to be a skilled robot driver (Hennessy Elliott, 2020). Similarly, shared experiences of sorrow and solidarity complexly saturated the actions of an activist collective of Filipina migrants mobilizing mathematical literacy in a Japanese neighborhood to make visible minoritized women's experiences of violence (Takeuchi & Aquino Ishihara, 2021). In these cases, knowing and feeling to be in relationships with group members in ways that reconfigure the way racial and gender injustices are expressed in social practices can be viewed as a learning aim in its own right (Nasir & Hand, 2006).

As the cases above also suggest, even the embodiment of negatively-valenced affects during social practice can be integral to the development of group knowing. In one example, students participating in a robot engineering exercise experienced the affective-epistemic condition of uncertainty together and alone in ways that stymied, altered, or propelled their experimentation together. When student members joined in the frustration, confusion, or worry of others (even, as one student voiced it, "until we explode [and] just quit" (Jordan & McDaniel Jr, 2014, p. 508), this practice of mirroring and escalating fellow peers' exasperation fostered trust and confidence in the group's capacity to make different sorts of attempts as they tinkered together. We read the above case as an instance of affective attunement among a collaborating group, a concept we elaborate below.

Affective attunement

Relational psychoanalyst and child psychologist David Stern described (affect) attunement as the “ability of one party to join in with or share in the subjective state of another” (2010, as cited in Boldt, 2021, p. 7). When a baby attunes to a caregiver, for instance, it does so not by matching exact actions but rather by matching the affective tone of the other (Boldt, 2021, p. 11). Tone, variation, and energy flow are repeated concerns of affect theorists in conceptualizing affective attunement. The flow of energy or “vitality” (Stern, 2010) moves and shifts in dynamic, emerging ways between people. Stern’s (2010) own focus on embodied action is not a form of explicit communication, but rather as the implicit movement of vitality, involving types of attunement often out of conscious awareness. Therefore, to speak of attunement between individuals is not to speak of a static state, but of constant modification and adjustment in time. Boldt (2021) notes how the temporal characteristics of attunement as an emergent process are particularly salient; tracing attunement between people involves considering the moment-by-moment qualities of duration, speed, time, movement, and rhythm as people adjust to one another’s tone. Similarly, Ash and Gallacher (2015) argue that affective attunement can be defined as “the capacity to sense difference” (p. 2). Emphasizing the nonrepresentational and often sub-or pre-conscious dimensions of affective attunement, Ash and Gallacher (2015) describe it as

... a basic way of sensing the world before we organize it through internal self-narration, the representational logics of language or a theoretical account of the senses as a series of discrete faculties. (p. 1)

Historically, related conceptions of affect, developing in the social sciences and humanities over the past 30 years or so, were developed in process philosophy dating back to Spinoza (Robinson & Kutner, 2019), and later expanded by the work of Deleuze and Guattari (1987).

Referring to various ways it is often used in psychology, affect has many potential meanings, including, for example, as interchangeable with emotion, as an internal state, as an added dimension to thought, or as a particular state we attempt to achieve (cf. Boldt & Leander, 2020). For instance, in the opening scene an understanding of affect as emotion would focus our attention on the internal states of Brandon and his scene partner rather than on the building of intensities between them through their postures, movements, and responsive intensities. In the present work, we shift from a more traditional, psychological view of emotion, or of the conflation of affect with emotion, to a dynamic perspective on affect informed primarily by Deleuze and Guattari’s (1987) theory. This shift involves moving from the individual to the fully relational, from the historically conceived to the

presently produced, from the uniquely human to the human *and* material, from the “internal” to the internal/external plane of relations, and from the idea of a “state” to the raw flow of energy. This shift from emotion to affect matters to us in relation to theorizing and understanding how felt intensities or energies are shared and transferred across a group, and cannot be understood as the sum of individual experiences.

Brian Massumi, the pivotal translator of Deleuze and Guattari (1987), defined affect as “a pre-personal intensity (p. xvii).” The concept of “pre-personal” not only separates affect from (the necessity of) conscious awareness, affect also does not “belong” to an individual (as, perhaps, emotion may). Rather, affect is a relational flow of intensities that catches things up, brings things together, breaks things apart, and can be expressed as possibility, momentum, and emerging directions of force. Ash and Gallacher (2015) associate the implicit, subtle, and unconscious dimensions of affective attunement to its energy as an embodied phenomenon:

... many of the cues that dictate what is and is not appropriate in a situation are not based upon language or discourse, but more implicit markers, such as body language, gesture and tone of voice which are differentiated and expressed through the somatic corporeality of the body, which operate outside of purely discursive or conscious registers. (p. 3)

A great deal of work in affect theory and in post-humanism more generally has attended to the relations of humans to non-humans, taking the idea of affective attunement out of a uniquely human realm (e.g., Manning, 2013). In this study, we acknowledge the significance of expanded analyses to include non-humans, and yet we are primarily concerned with the collaborative affective attunements between improvisational players, energies that cannot readily be captured by representational approaches alone, with their drive to textualize and decode social-interactional life.

Methods

To address our research questions concerning how a group of improvisers describes and demonstrates the ways of knowing necessary to improvise theatrical scenes together, we investigated the experiences of a recently-formed musical theater improv group, “Strawberry Superboom (SS),” a troupe that improvises full-length musicals inspired by an audience suggestion. We situate our methodological approach within an emerging line of performance research exploring the in-the-moment, affective and embodied experiences of artists and other social actors while acknowledging the difficulty of representing the phenomenal, felt qualities of shared or individual experience via words, video, or any other representational medium (Dewsbury, 2010; Vannini, 2015). As we detail below, we draw upon

ethnographic methods, adapting these to our specific purposes and affect-theoretical approach.

Context for study and research site

We collected the data for the present study over the course of an ongoing, three-year ethnographic and autoethnographic (Ellis et al., 2011) exploration of adult players improvising as a group at the “Fourth Shore” training center, a local performance venue that offers classes in improvisation and stand-up comedy located in a mid-sized Southeastern U.S. city (see also Carter-Stone & Leander, 2020). Founded in 2016, Fourth Shore offers classes for adults of various levels of proficiency in improv which are grouped according to “levels” ranging from 1–6. Kevin and Laura (Authors 1 and 2, respectively) have taken improv courses at Fourth Shore (for 3 years and 1.5 years, respectively), during which time they collected field notes and voice memos about their first-hand experiences, and interviewed improv instructors, professional improvisers, and fellow students individually and in groups toward understanding the trajectories of improvisers learning the craft. While not data sources for this study, these previous experiences of data collection and analysis, along with emerging findings, influenced our methods for the present study by motivating us to undertake what Erickson (2006) characterized as a collaborative ethnography by “studying side by side” (p. 204) with Emma (Author 3), a more experienced improviser (see also Takeuchi & Aquino Ishihara, 2020). Emma began as a student at Fourth Shore, and has been practicing improvisation for seven years. Prior to Fourth Shore’s temporary closure during the COVID-19 pandemic, Emma taught several introductory improv courses at the Training Center and performed in two regularly-performing “house teams,” including Strawberry Superboom, the focal group for the present case study.

Strawberry superboom

Composed of 12 active members, Strawberry Superboom (SS) had their first performance at an Improv Festival on October 31, 2019, and performed monthly until March 2020, when the COVID-19 pandemic brought all rehearsals and performances to a halt. We selected SS for the present study of how a group of improvisers characterizes the knowledge necessary to improvise well together for several reasons. First, as one SS member, Irish, explained in an interview, musical theater improv requires a greater capacity and sensitivity to embody feelings as an ensemble, in contrast with non-musical theater improv, and was thus suitable for our study of the affects/emotions constitutive of social practice. Additionally, while players in SS have experience ranging from 4 to 8 years in the craft of improv and related performing arts, with a diverse range of experiences with theatrical acting, directing and musical performance,

they remain a newly- formed group, offering us the opportunity to study the group early in its history of performing as an ensemble.

Data collection: Collaborative research performance and video-based self-interviews

The primary sources of data included a 1) a two-hour “collaborative research performance” (Bosco & Herman, 2010) with seven SS members (including Emma) reflecting upon their history and practices of improvising as a group, and 2) iterative rounds of SS members’ audio-recorded and/or written self-interviews based upon a selected video-recorded improvised scene from one of the group’s performances. While SS at the time of the study was composed of 12 active members (11 White-identifying [two Latino/a] performers, with 7 women and 4 men, and 1 Black male performer), only 7 group members were able to participate in the focus group. All focus group participants identify as White (1 Latino), with 4 women and 3 men of a variety of sexual orientations.

We conceptualized and designed the focus group as a “collaborative research performance” (Bosco & Herman, 2010). This focus group-as-performance engages participants and researchers alike in a collective “process of knowledge production,” provides participants opportunities to collaboratively make sense about past experience, and (at times) direct the conversation in unanticipated ways (p. 3). In this focus group, we sought to generate spoken verbal reflection about how SS’s knowing over the personal history of the group, while also inviting SS members’ ability to demonstrate—for example, through close listening and attention to each other’s’ verbal and non-verbal cues, elements of the way the group has come to improvise scenes over the course of a group-improvised conversation. During our own experiences with improvisation, whether in classes or groups, we have noted improvisers, especially those with a history of playing together, tend to enact many foundational improv practices in conversation. This particular focus group shared even more with an improv show than the researchers had anticipated: the musical coach and piano accompanist showed up poised at a keyboard, upon which he played snatches of improvised songs or riffs as the group engaged in the spontaneous reenactment of parts of remembered scenes or rehearsal, punctuating these partial reenactments and memories with commentary concerning what they had learned or come to know during these recalled moments. We thus understand the video-recorded focus group as an interactional phenomenon by which the group re-sensed, differently considered, re-narrated, and collaboratively analyzed how and what they know about improvising as an ensemble.

Our semi-structured interview protocol for this focus group combined open-ended questions about the group's ways of knowing over time (e.g., what does SS as a group know how to do now more effectively than you did when you first got together?) with more specific questions about improvisational practice, informed in part by the authors' own practices at Fourth Shore. Embracing the capacity of focus groups to "create possibilities to challenge and inform theory from the ground up" (Bosco & Herman, 2010, p. 11), the authors also probed participants' own endogenous categories of for making sense of their knowing as a group, having noted that several performers identified "learning each other's strengths" as essential for knowing how to improvise well together, and that their development had involved "drilling down" into tropes of the musical theater genre and becoming "less messy" to improvise more coherent narratives. Following the focus group, we also distributed a short questionnaire requesting that participants elaborate upon their experience in improv and related performing arts, along with providing basic demographic information.

The "Mother nature revival" Scene and video-based self-interviews

When prompted to reflect on "good" scenes in which they had come together as a group to play together differently than they had previously, several focus group participants identified a particular scene (dubbed the "Mother Nature Revival," or MNR, scene) in which they were able to come into "realignment" with each other and the audience during an otherwise less-than-successful show. This performance had been video-recorded by SS's musical coach, as are most improv performances at Fourth Shore, as a means of training the performers to reflect on their practice. When one player recalled this particular scene, all of the SS members who had improvised within it (5 of the 7 focus group participants) excitedly chimed in to collaboratively construct and reexperience the scene, complete with snatches of song, piano accompaniment, and choreography. Participants explained that, in the scene, they had been able to transition from what they characterized as a "messy" performance (so messy, in fact, that their improv acting coach "gave [them] a D-minus" on the show overall) to an effective group-improvised scene satisfying for players and audience alike. This shift, along with the capacity of this particular scene to invigorate all of its participants into enthusiastic yes-and-ing and a partial reenactment (Vogelstein et al., 2019) during the focus group, we took this video-recorded scene as a "hot spot" (Jordan & Henderson, 1995) for analysis. We identified the MNR scene as a "telling case" (Mitchell, 1984) relevant to our questions concerning participants' emic experiences of coming to know how to improvise together, as it was identified by members as a pivotal scene that was emblematic of how they at times approach "groupmind" more generally.

Influenced in part by the Ma and Hall's (2018) observation that playing back a performance of a high school marching band elicited members' cooperative analysis of their performance (along with groans and laughter), in keeping with our commitment to privileging improvisers' endogenous perspectives on coming to know how to improvise as and within this particular group, we engaged SS players who had participated in the MNR scene in two rounds of video-based self-interviews, a process which we adapted from "discourse-based interviews" (Odell et al., 1983) to capture and compare players' individual accounts of their experiences within the scene. along with their responses on the way the scene demonstrates or otherwise prompts reflection upon what they have come to know about and within the group. Following the interview, we distributed Emma's copy of the 3-minute long scene to all 5 players, and requested that participants, through an audio memo or writing, report upon what they were thinking, feeling, and responding to, moment by moment, over the course of the scene, any patterns they identified concerning their own or others' tendencies as individual players or as a group, and any resources or knowledges upon which they observed themselves or and their fellow players drawing during the scene. We also asked them to share their reports of new considerations concerning the group or their individual experiences that emerged over the course of the viewing.

We understand this process to function as an effort to leverage some of the power of Interaction Analysis "without committing to its ontology" (Elby, 2016, p. 257). As Elby (2016) urged researchers of knowledge-in-interaction to attempt, this process indicates our effort to "include conceptual and social aspects [of interaction] (and epistemological and affective aspects), giving a priori primacy to none of these components (p. 257)." Our own ontological commitments and associated methodological processes differ significantly from Elby's own approach, however, in that we understand our own ethnographic work in the vein of nonrepresentational inquiries of knowing underpinned by an affect-theoretical approach to data collection and analysis. Our approach strives not to arrive at a "true" representation of an past event or phenomena, but rather acknowledges the limits of any mode of representation to capture all dimensions of subjective experience. We also wish to leverage the power of spoken and written discourse—which makes close reference to a video of interactive, embodied improv performance—to provoke a new sort of sense-making experience for participants, researchers, and (eventual) readers of analysis (e.g., Tanner et al., 2021). As Emma insisted in an analytical discussion about the players' "insider" experiences of knowing how to improvise well with another (versus experiences of struggle or disconnection), "it's so rare that [an observer] can tell that from the inside. . .it's unlikely you'll be able to detect a disturbance in the force; it's such an internal feeling." Through our own approach, given our goal to tap the embodied, affective, and cognitive elements of participants' emic perspectives on an instance of successful group

improvisation, participants selected for themselves the moments in the video which they commented upon, associating these moments with a particular timestamp in the video.

Data analysis

Keeping with our effort to understand how a group of improvisers comes into their craft from insiders' perspectives, we follow Keifert's et al. (2020) approach to analysis by "privileging members' phenomena (Sacks, 1992) by focusing first on participants' meaning-making and *then* researchers' meaning-making in relation" (p. 1471, emphasis original). Specifically, the authors engaged in a round of thematic coding of SS members' *in vivo* terms for the terms through which they characterized processes of group knowing (e.g., "learning each other's' strengths," "drilling down," "speaking a group language," or "reading each other's' energies"). We next engaged in second round of coding reflective of our research questions by analyzing the focus group and video-based self-interview data through additional codes reflective of the endogenous ways members grouped these categories and via analytical categories reflective of our own ongoing auto/ethnographic work at Fourth Shore and Emma's improv experience.

Based on our understanding that attuning to other players' affective and emotional experience and synchronized felt actions in a way that is often difficult to verbalize is a bedrock of improv training, we captured participants' expressions related to the influence of "vibes/vibrations," "energies," and "feeling emotions" under the provisional category "attunement." Looking across these data sources and codes, the three authors engaged in analytical memoing concerning how these various qualities of SS's processes and components of how they came to know how to (sometimes) improvise well as a team. We provisionally labeled these two types of knowing "Knowing 1," which encompassed the dimension of improv knowledge which include the specific practices, terms, tropes, and structures of the musical theater genre as they came to be performed by this specific group, and "Knowing 2." "Knowing 2" referred to the knowledge of in-the-moment, felt sensibilities among the group, which may or may not have been detectable to an audience member, and which group members nearly always described in metaphor (e.g., telegraphing energies, picking up on vibes, a secret Morse code). We selected stills from the focal performance video segment of moments in which significant changes occurred in the scene, as identified by the players (for example, a change in "vibe," perceived by several performers, or when new players joined the stage in response to another's cue). Following the first round of self-interviewing, several participants completed a second round based on another viewing of the video, responding to our requests for clarification or elaboration, or questions and comments based on emerging analysis. Near the end of

the process, we renamed “Knowing 1” as “Shared Social Practice (SSP)” seeking to capture not only the way SS developed their group knowledge of the musical theater genre, but the way this *particular* group enacted particular shared practices. “Knowing 2” became “Collaborative Affective Attunement (CAA).”

In addition to a coded analysis we followed our own affective attunements to the data and to our experience of it, including the performers’ interactions during the focus group, the performers’ play during the videotaped performance, and even our own affective attunements as a group doing affectively-oriented ethnography together. Ash and Gallacher (2015) suggest a general approach to such work:

Becoming attuned to a situation is less about developing new methods with which to perform social science as it is a way of opening and honing the capacities of our own bodies to understand and analyze the social world, which we can use to supplement existing qualitative methods. (p. 8)

Because we wanted to resonate with the kind of phenomena we were seeking to study—collaborative affective attunement—we gave considerable attention to our own felt experiences of the data—to how these data registered on our bodies in ways that were sometimes difficult to define but gave to occasions to record and analyze such affects. We considered this “haptic and often unreflected upon somatic knowledge of the body” (Ash & Gallacher, 2015, p. 12) as important and as principled as reflective and rational analysis. Our own affective attunements in these ways, given the goals of the paper, were oriented toward experience *differences* or *variations* in the (performance of the) focus group, as well as differences in the videotaped performance. While we did not create a definitive list of such variations, frequent among them were a. felt changes in tempo or rhythm, b. marked shifts in energy, c. changes in affective tone, and d. moments where movement within or across the group changed. An intuitive sensibility of trusting these felt differences guided our work and was entangled with the work of more structured and coded analysis, in the sense that we often found ourselves, like the ensemble itself, making shifts from one mode to the other.

Findings

For these SS members, two analytically- distinguishable but inter-related forms of knowing were of crucial importance for the group to move beyond their initial tendencies to improvise “messy” or at-times incoherent or unsatisfying scenes (which one player characterized as “frustrating”). Our analysis suggests that knowing how to improvise more coherent and effective scenes of musical theater as an ensemble—scenes during which, as in the MNR scene, a collection of performers are more likely to attain a sense of “groupmind”—involves two

distinct, but, in practice, complexly intertwined and interacting modes. We have termed these different modalities “Shared Social Practice” (SSP) and “Collaborative Affective Attunement” (CAA) (Appendix A). Following explanation and elaboration of these two modes, we trace the ways SS explains and enacted their processes of coming to deepen, extend, and integrate these two forms of knowing, both over the course of the group’s history, and in the context of the MNR scene. We take up the active verb form of “knowledge,” as we understand these forms of knowing as dynamic, enacted, and as deeply woven together, especially in seasoned practice.

Shared social practice (SSP) and collaborative affective attunement (CAA)

SSP is a more familiar form of knowing for socioculturalists and practice theorists. Here, we intend the kind of knowledge acquired through participation in a community of practice, through mentorship, and through material, embodied activity. The most familiar example of SSP in improv, for instance, is the practice of “yes-anding” one’s scene partners. This practice involves knowing to accept a character, idea, or action from a scene partner as an “offer” and adding something to it. By CAA, we intend sensing, feeling, or activation by an experienced energy during the moment of improvisation. This kind of knowing involves a kind of affective openness, rawness, and awareness. For the player, CAA is located in the relation between the player and an assumed character, as well as in the relationship of player to scene partners. Brandon, in the scene with which we introduced this paper, comes into a feeling of fear early on with his scene partner, and within the sensing of that fear, emerges into a character, status, and character relationship. CAA was often described as a kind of “hyper-listening” or “hyper-vigilant” sensibility to one’s partners. Our focus in considering CAA will be on the embodied practice of attunement. In particular, we focus on the way the group describes how they detect and respond to the affective “pre-personal intensit[ies]” (Massumi, 1987, p. xvii) expressed by their teammates in implicit, polymodal means, including body language, gesture, and tone of voice.

An ensemble reflects on their knowing

The focus group process with Strawberry Superboom, as an interactional event, reflected in its “media” the messages that it conveyed, in that as group members shared a great deal of information on the background and ways they came to develop their knowledge of SSP, they were enthusiastically overlapping, riffing off and expanding one another’s statements (CAA). Following, we explore some of the different dimensions of these data, which also provide some background for our analysis of a brief scene from a performance by SS.

Shared social practice

Among the most explicit types of instructional practices via resources identified by the group included the routine watching and use of musicals as models for their thinking and action. Many of the group members had taken a class together on improvised musicals, where the idea of watching and discussing musicals was part of the course's pedagogy which the group continued to refer to. Dave made explicit mention of how this use of models could be tied to a specific musical, and not just musicals in general:

I found that like the *Lion King* is a narrative that's deeply ingrained in my bones, and that I apply to many situations in life, and also onstage.

Moreover, the *Lion King* for Dave also functioned as a resource for entire group coordination—a shared resource that could bridge to more of group flow:

you know, you start to see that. . . come alive, and that once you start bringing that to the stage . . . you start connecting with people. And that starts establishing group mind with your peers.

In addition to drawing on musicals, a resource that provided structure was the trope, such as the trope of the protagonist with a “want” and the villain. Ava expressed that knowing such tropes “opened a lot of our eyes to the things that we were kind of trying to do organically, but we didn't see through to the end.” The explicit practice and discussion of these such tropes helped to bring form and coordination of action to the practice:

. . . by practicing it together, we were able to help each other, identify, “oh, you know, Jane's playing the villain of this story.” And that is clear. So, she's going to try to get in the way of Dave, who's playing the protagonist.

Finally, although the group did not engage much with the function of coaching or teaching in the focus group, the explicit teaching by two coaches (Larry, who was also musical director and piano player, and Pete, an improv teacher) arose at different moments. Charlotte, for instance, discussed how Larry helped her recognize how some small mannerism of a character—which she called a “nugget”—could show up repeatedly in the show, could help other characters out, and could “help create a linear story that makes sense.”

SS members were highly affirming of one another's strengths as performers in the focus group, which was reflected, again, in both the content and the light-hearted, affectionate style of the conversation. The ensemble spent a considerable amount of time discussing how knowing one another's strengths informed them as improvisers; Larry called this type of knowledge a “group currency of really understanding how each other work as performers.” The players discussed how this kind of knowledge emerged through repetitions of practice and performance, and often indicated how it enabled forms of vulnerability and trust (as related to CAA) that were essential for group improvisation.

Group members also agreed that competition between them would get in the way of these ways of valuing and playing. Bad scenes were associated by Charlotte with moments “where egos got in the way.” At times, knowledge of one another was expressed in concrete terms: Samantha’s ability to bring a dance step into the scene, or Dave’s capacity for creating likable characters, as two examples. At other times, strengths were expressed more in terms of a recognition of players’ ability to pull a performance together (Charlotte: “like there’s something we’re missing . . . and Cassie comes in—she’s got something where she can see past all the layers that we’ve already dug into”) or radically change the course of a performance emotionally (Samantha: “if I need two women to bring the fucking house down, I’m going to get Jane and Ava on the stage and leave—I’m going to set them up”). This latter example is also illustrative of another phenomenon—how the recognition of strengths by group members, as a form of SSP, were not only associated with individuals, but also with pairs or even small groups within the ensemble. In this sense, Samantha and Ed both noted that they often make opposite character or scene choices during play, and in that way functioned as effective character foils for one another, and hence would pull one another into scenes at moments that seemed ripe for it. Other dyads of performers developed patterns which they enacted while remaining in character during shows, as was the case with Chuck and Irish, who often played a “game” which one another member characterized as “you sing; no *you* sing.”

Collaborative affective attunement

Focus group members discussed what we have termed CAA at length, associating this kind of knowing with “speaking the same language,” with sharing “energy,” with “tuning in,” with “synergy” with “vibing” and with the “subconscious.” In this segment from the focus group, Chuck and Dave create a number of relations to this form of knowing, and also comment on the group’s growing capacity with CAA:

Chuck: I would say one of the skill sets that we’ve developed as a team, [which] is important in all of improv, is the ability to read and be read. Basically. . . if Cassie’s onstage or Miranda is onstage, I have an exact idea about what they kind of want to do, just by looking at them . . . I have that same feeling with Larry sometimes, where it’s just like, Larry will start to do something, or even before he touches the keys, I’m like, “all right.” I can tell what kind of heat he wants to bring. And I think that, to a degree, it’s a skill to be able to telegraph that to your castmates. It is a skill to be able to look at [them] and understand what they need and want.

Dave: That is spot-on. That’s [it], exactly. I mean, all of this is about. . . connecting with people. And the way you do that is by reading them, feeling

their energy. And you do that through. . .making eye contact with people by—I think subconsciously—like, acknowledging and reading their body language. And then. . . I want to pass whatever feeling I’m getting from my teammates on to everyone who’s watching . . . and it’s transmitted to everyone, out through. . . a vague Morse code that everyone can pick up on and feel.

Chuck and Dave, as well as other players in the focus group, associated improvement in attunement with the entire ensemble, by necessity. Chuck and Dave related the practice to observing (“looking,” “reading them”) as well as to sensing (“feeling,” “can tell what kind of heat he wants to bring”). Both players emphasize that this kind of knowing is both receptive and transmissive—Chuck associates communicating needs, wants and “heat” as a “skill” of being able to “telegraph to your castmates,” and Dave extends the metaphor as a “vague Morse code that everyone can pick up on and feel.” Picking up on this conversation, Ava expressed that “improv, in essence, is like people putting out energies . . . and when we’re on the same wavelength, it’s when it goes so well, that’s like holy moly, like that was magic.”

During the focus group, some of the SS members talked about the relations between a more conscious level of emotional shifting in scene play with a less conscious sense of attunement to one another. We felt these conversations were interesting examples of how knowing how to improvise involves moving between more conscious and less conscious ways of feeling, thinking, and being, what we have called SSP and CAA. A nice illustration of how these transitions were managed within the group involves Larry, as the piano player and music director. Behind the keyboard, ensemble members depicted Larry as sensing and then bringing definition to what could be a mixed or vague emotion:

Charlotte: It’s just very. . .validating. That is usually at least one way that. . .it signals off for all of us [as a team]. We’ll hear him play a certain note. . . and then we can all say, “this is the tone of this scene right now.” We either play into it or we. . .fight against it to create that friction . . . because of the sounds because of the *notes*, it brings you back down to like very basic principles of. . .what feeling is this? Mad, happy, sad? And then, from there, we can go with it.

Charlotte, Larry and other players in the focus group made direct connections between what they called emotional “heightening” and definition on the one hand, and group attunement on the other hand. Some emotion-laden action is unclear, a note is attuned to by the bodies of the performers, and this attunement creates a shared definition of emotional import, which in turn provides an opportunity for building attunement. The discussion on emotion and attunement was particularly interesting for the amount of time SS members devoted in the focus group to verbalizing explicit emotional definitions with CAA, given that pre-personal affect is often difficult if not impossible to capture through words or other representational means. They associated

emotional heightening with intense forms of attending, listening, and projecting to other group members. This seems an important case of group knowing practice where the consciously known and controlled sides of emotion (as part of SSP) and less consciously aware sides of affect (CAA) come together.

SSP and CAA in performance: An ensemble recalls and attunes a scene

Following, we take up a segment of the Mother Nature Revival (MNR) performed by SS to demonstrate how SSP and CAA were made evident in their descriptions of their sense-making and enactments over the course of the scene, as well as to suggest how each was made evident throughout moments of improv performance. As is often the case in nonrepresentational approaches to ethnographic writing, our goal is to emulate something of the emic experience of the performers in the ensemble during the scene, and to consider how they draw on different kinds of knowledge, including attunement, during the course of the scene's unfolding. Following, we begin with an overall scene depiction up to the point of the sixty-second segment upon which we focused for analysis (of which thirty-two seconds are presented here). This is followed by still frame photos from three different moments in a performed scene selected according to the methods detailed in the Analysis and includes corresponding time-stamped selections from players' self-interviews upon viewing the video which elucidate the complex ways that performers intertwined both SSP and CAA over the course of the scene.

Scene description prior to the selected episode

The Mother Nature Revival scene was part of a musical show about a development company tearing down a forest of trees to build a new subdivision. The trees were characters who spoke and planned a way to save themselves throughout the show. The scene began with Charlotte, who played a Tree, stepping on stage left. Dave immediately joined her, stage right and stood on a chair, waving his hands around and singing a high falsetto as Mother Nature. These two characters had appeared earlier in the show, so the audience quickly knew who they were. Larry continued to play the choral piano chords he used in the scene transition to accompany the singing and speaking in the scene. The Tree let Mother Nature know she couldn't see her by saying, "I hear you Mother Nature!" The Tree didn't make eye contact with her to confirm they were in two different places (which is known as a "split-scene").

The Tree lamented that she'd been struggling with squirrels fighting on her branches and feared her imminent removal by the development company. Mother Nature listened to these complaints while singing in an ethereal voice, urging the Tree to save the threatened wildlife. The Tree,

panicked, asked Mother Nature what she should do. Mother Nature sang back that she “has an idea!”

At this point, the music picks up into an upbeat, happy song. Mother Nature started to sing about her idea, and granted the Tree legs and arms, so she could walk, grab things, and “stick up for herself, so she could stick up for all of us.” (The audience chuckled at the stick/Tree pun.) The Tree began to sing sweetly, saying she needed some help and didn’t know what to do. Mother Nature dug deeper into her role as a mentor for the Tree, singing encouraging words to the frightened Tree. The music picked up speed and volume, as Mother Nature quickened her song and began to uplift the Tree to be able to save everyone.

2:05



Mother Nature’s eyes are widened. She has just finished singing “mother-fucking” (as part of a phrase encouraging the Tree to fight the “motherfucking humans”) and has flung her arms wide. Approximately thirty seconds earlier, she endowed the Tree with arms and legs. The Tree has clasped hands and a backwards step, indicating timidity and hesitation at the prospect of fighting the human developers.

Larry (piano accompanist/musical director): At 2:05 we arrive at the final A. Based on his hand gestures and hearing him say “motherfucking,” I knew we had to raise the energy higher than the previous section, hence the 8th note rhythm in my right hand.

Dave (Mother Nature): So, the vibe has changed. ‘Cause I could feel Larry like building up on, I don’t know, maybe like a five chord. And it was. . .dying

to go back and carry the momentum. So, I just sang louder and sang a little higher pitched.

In Dave and Larry's reflections on the MNR scene, we find evidence of both SSP and CAA, tightly bound together in influencing Larry and Dave's choices. Larry appears to be thinking about song structure (ABBA, perhaps) and reflects an awareness of chordal progression and structure. Mitch also demonstrates this form of technical knowledge with his supposition that Larry was "building up on . . . maybe like a five chord." Yet, at the same time Larry is attentive to non-musical pieces of Dave's action, including the arms flung wide and the use of "motherfucking." (Larry notes in his self-interview that he could not hear Dave's words as he sang, based on the location of the piano.) The gesture and word urge him toward higher energy (CAA); in response, he picks a particular (8th note) rhythm (SSP). At very close to the same moment that Larry is responding to Dave, Dave is responding to Larry—noting that "I could feel Larry like building up on . . ." which prompts Dave to increase energy for the scene and prompts him to sing louder and in a "higher pitched" falsetto. In Larry and Dave's reflections on this next portion of the scene (in which Samantha and Jane enter with syncopated clapping and choreography), we note not only the presence of forms of knowledge characteristic of SSP (e.g., the rhythm associated with the genre of Gospel, dance choreography) alongside CAA (e.g., "raising the energy") but also note how SSP and CAA are temporally related in the scene.

2:22



At 2:14-2:16, Mother Nature sang “with the help of your squirrels.” At 2:19, Squirrel 1 enters the stage with syncopated clapping. Squirrel 2 follows, thrusting her head back and forth with the rhythm. One second earlier, the Tree shifted from leaning back with her arms clasped at her chest to begin clapping along. At 2:22, the squirrels and Mother Nature have not yet synchronized their dance steps.

Larry: At 2:19, Samantha and Jane enter the stage clapping on the off beats. Based upon my location in the theater. I didn’t see them preparing to make this choice. Based on that rhythmic choice, though, the only way we could continue raising the energy while staying true to the religious nature of the moment was by shifting the genre to Gospel, specifically emulating a praise break.

Dave: You can see it in my eyes. At 2:17, Samantha comes on clapping. And at that point, I feel. . .all the synapses going off at once. I completely understand what’s going on now. Suddenly the miracles, and me performing them, and this attitude, and this music all make so much sense.

Recall, from our opening of the lemon scene, that Brandon reported how “fear came first”—how CAA set in motion a set of choices regarding character, status, and relationship. However, and as an opposite movement, note how Larry in Segment 2 consciously changes the music genre to Gospel with his piano playing (SSP), and how this move creates CAA for Dave to come to a sensed knowing of the whole, which he describes as a kind of gestalt: “And at that point, I feel. . .all the synapses going off at once. I completely understand what’s going on now” (Dave).

Jane (Squirrel 2): At 2:15 you can tell the music is really getting choppy and Samantha is dancing. It’s very clear to me, now, when I’m watching it, that it’s . . . [a] revival. I was trying to channel—honestly, I was thinking more like a Black Baptist church, just ‘cause I think I’ve been to more Black Baptist services.

Samantha (Squirrel 1): I tried to motion to Jane to do a jazz square, but I’m not sure if she heard me. We’d spend rehearsals practicing getting on the same page as the other dancers on stage with you, trading off dance moves every 8 bars or so. I was trying to get to that.

Jane: I wasn’t synching up with her because, you know, in Black Baptist churches, it’s way more. . .everybody’s kind of doing their own thing. They’re. . .taken by the spirit, but then I could tell that Samantha was doing a bit more of a choreograph[ed move], like a jazz square.

Here, in Jane and Samantha's difficulty to "synch up" in these moments, we see a mismatch between histories of particular types of religious social histories and practices (SSP) in Jane's efforts to "channel" Black Baptist services, which are at odds with Samantha's efforts to move them into a synchronized "jazz square." Additionally, these differences in SSP also reflect—and perhaps create—obstacles in these players' capacity to enter into CAA, as Samantha's enactment of a shared dance step conflicted with Jane's embodiment (or expectation) that, being "taken by the spirit," in her experience, members of Black Baptist churches "kind of [do] their own thing."

Dave also experienced difficulties in entering into rhythm and choreography that Jane and Samantha (eventually) established:

Dave: For some reason, I don't know why, I can't get on the same clap because like it's like, they're like, they're like syncopated, they're really doing it right. But I just had to get myself back on track and clap myself back into awareness—or get [myself] back on beat, basically. And then once I found it, I just knew. . . this was a perfect moment to step up [downstage].

Dave's knowing stumbles here: just a moment after the instant experience of the emerging scene making sense, Dave finds himself off beat with the others, and has to return to a shared social practice in improv (mirroring other performers in the same action) to get into synchrony. Next, deliberately drawing on the SSP of breaking the fourth wall, Dave steps forward to engage the audience, which in turn energizes further affective attunements across the group. This back-and-forth movement between SSP and CAA run throughout our data and seem to be especially characteristic of the group flow as (entangled) ways of knowing. Moreover, in moments of stumbling or breaking flow, SSP and CAA both appear to serve as resources to "repair" and move forward toward group flow. In Jane's reflection upon her eventual ability to synch up with Samantha's dancing, we see SSP driving the activity, when Jane correctly identifies the Samantha's step:

Jane: I'm doing my own thing up until 2:26 and I see what she's doing. I, you can see that I look over at her, and I can tell she's doing this. . . not really even doing a jazz square, she's just doing four corners of clapping. And I'm envisioning what the stage picture looks like from the front, which is that we are symmetrical behind him. And so, if we did a very choreographed, symmetrical thing, it would look really cool.

These moments are interesting for how they begin to introduce rhythm as a resource for attunement, while at times, also being a resource for meaning definition. Larry notes, again from his limited sight location at the piano, that the off-beat clapping would be something he might otherwise watch for, even before it began (as a practice of attunement). Given this form of clapped

rhythm, and his expressed desire to keep raising the energy of the scene while creating some congruence with its “religious nature,” Larry remarks that his only option was to shift the genre to Gospel. Dave, by his account, seems caught up in the moment, with “all the synapses going off at once.” Dave records a strong statement of knowing: suddenly it all “makes so much sense.” Note that the music, the miracles, the attitude and all of it make “sense” in a felt way that accrues through affective and meaning relations brought to them after they occur. “Sensemaking” as attunement is the felt relation of things coming together, cohering as they emerge and align to the same felt tone—not to a single direction or meaning.

Jane and Samantha are in different spaces as their dancing begins—Jane watching Samantha, but also thinking about a revival service, thus recalling that kind of energy and event and entering into it. At the same time, Jane is trying to “channel” this kind of energy to Samantha as an attempt at attuning in the group. Samantha, on the other hand, is thinking about a specific form—a jazz square, and trying to explicitly indicate this to Jane, so there is an obvious “miss” in both communication and attunement. Jane gradually begins to realize this miss as the two of them are not coordinated, and also draws on another explicitly learned resource—imagining what the performance must look like from the front. She then enters more explicitly into coordination with Samantha. During this time, Dave finds himself off beat and determines to coordinate his action by explicitly finding the beat with his claps. The clapping, however, and the feeling of that coordination, informed Dave with the feeling that it “was the perfect moment to step up.”

2:32



The Tree is using her new arms and legs to dance after crossing to stage right. All traces of her earlier hesitation are gone. After making eye contact at 2:26, the squirrels have settled into a four-corners dance step. Starting at 2:25, Mother Nature has begun to “break the fourth wall” by singing directly to the audience as she walks downstage. By 2:32, she has just declared “Hallelujah,” and has flung up her arm, pointing at the audience to elicit them to respond with their own “Hallelujah.” We see several members of the audience begin to clap along.

Dave: at 2:27 or 28, it’s no longer just what’s going on onstage. It’s like, “Oh, I’m going to address everybody in the crowd and do a classic, well, we’ll see. ‘Hallelujah.’” And I do the—oh my God, I do call and response. At 2:25, I realize how far back I am, and remember how [my improv instructors] stressed the importance of being closer to the audience. And I, you know, I had like a friend come up to me afterward and be like, how did you know that everybody wanted to sing during that? And you know . . . I honestly don’t know.

Jane: So, that’s why I just started going into that. And then it was just, you know, balls to the wall energy from there on out. Hallelujah.

Charlotte (Tree):breaking out into celebratory song and claiming a “miracle” in every moment is not too far off from my upbringing (LOL!) It felt like such relief to have that connection, and perhaps that relief, and the fact that Mother Nature was literally performing miracles to really bring the energy back to the show. I think we all were actually thinking “Hallelujah!” in our heads because we felt the energy!

Dave recognizes that energy has transferred from the stage to the audience and determines to build on that. Even in the recall, Dave is surprised by his own action (“Oh my God”), suggesting something of his incomplete awareness, at the moment, of the action. He also gives two accounts of “breaking the fourth wall” (a theatrical term meaning to directly acknowledge the audience) -one is that he remembered the importance of being closer to the audience, from explicit training, and the second is that he “honestly [didn’t] know” how he knew to sing with the audience. Jane seems much attuned to Dave in the flow of energy, and Charlotte also laughs at the resource of her own memories (in Pentecostal churches) for this moment.

Discussion and concluding thoughts

Shared social practice and collaborative affective attunement

We have summarized dimensions of SSP and CAA as we have collected and synthesized them across our data (Table A1). In analyzing our data, we were

struck by how many different forms of SSA that players can refer to and recognize, and how comparatively little CAA is differentiated. One explanation for this difference is that CAA is itself not experienced analytically, representationally, or entirely consciously, but is rather experienced as at the level of sensed energy, tone, and affective shift. At the same time, we were also impressed with how much discourse surrounded SS members' talk of CAA—how much significance was given to it within their group process and group knowing. In fact, focus group members often reproduced affective intensities in the ensemble when discussing attunement, thereby enacting this form of knowing within the group.

In many ways, the final scene we analyzed from SS's performance is a good example of an (eventual) accomplishment of group flow, in that there was an accumulating energy intensive coordination of different players' movements coming together. (The group also selected the scene as a peak experience for them.) In addition to this rapid enactment of shared social practices, players transmit energies, sense and even anticipate one another's movements, and co-create a resonating affective tone to the same, unfolding scene. Recall that in experiencing group flow, improvisers express that "activity becomes spontaneous, and the group acts without thinking about it first" (Sawyer, 2015, p. 13). Artists report the sense that "the group is in sync and the performers seem to be thinking with one mind" (2015, p. 39). Remarkable feats of synchronicity are accomplished; improvisers say or sing the exact same thing at the same time (Drinko, 2013), or perform an entirely improvised dance together that appears choreographed. As we conceive of group flow as not only enhanced by certain conditions (Sawyer, 2015), but also as a description of particular ways of knowing by a group, our analysis makes evident, at least in this study of dramatic improvisation, that neither shared social practice nor collaborative affective attunement can sufficiently describe the phenomenon of group flow by itself. It is not enough, on the one hand, that a group "share" a social (cultural, and historical) practice for that practice to be activated in the emergent moment of creative activity. On the other hand, group flow as collaborative affective attunement alone is also unattainable—while there may be the movement of energy there is no collaborative structure or shared repertoire to move the energy through. We see the entanglement of shared social practice and collaborative affective attunement as a key phenomenon to describe, and something we are only beginning to unravel.

As we have flagged at several points throughout our Findings, our data are often suggestive of SSP and CCA leading or propelling one another forward in the experience of group flow. In sociocultural theory, the concept of "leading activity" is conceptualized as joint, social action of some type (e.g., sociodramatic play, Vygotsky, 1967) that permits children or learners to outgrow their current activity and transition to a new activity form

(Kozulin et al., 2003, p. 7). Leading activity is thus descriptive of more extended stages of knowing, learning, and development. While not analyzing at this scale, and not directly taking up questions learning and development, our data are nevertheless suggestive that SSP and CCA, as ways of knowing by a group, “lead” and propel one another forward in emergent action. In this vein, we can productively consider the relations of SSP and CAA at the level of the social history of the ensemble, extending a consideration of how they are related over time and potentially “lead” one another. Ensemble members reflected that they were much better at the outset of their group’s formation at attuning to one another (CAA) and playing than they were at creating the story and character forms more necessary for a musical (SSP). In the focus group, they reflected on their earlier performances and rehearsals as “messy” and ill-formed.

Jane: We organically. . . discovered it. It was like, “oh, we’re kind of good at the messy discovery part. And then it was like, all right, let’s bring in the drilling-down. Let’s bring in the definition of it.

In the case of SS, this imbalance may have reflected the fact that players began in the group with a range of experiences in improv, but much less experience in musical theater improv, and needed to learn this new genre. Jane described how bringing in the “drilling down” involved more of the “science part” of improv, such that the “art part” could flourish. She described how this science part involved knowing tighter musical narrative forms and tropes (in our view, SSP). In similar fashion, Larry described how the group, early on, would sometimes fail to “get on the same page,” in a story, and “then nothing ever resolves.” The sense of being on the same page, for Larry as musical director, meant that the group would be able to perform an entire story that felt like a narrative whole within an hour. Jane, Larry, and others agreed that the group had been improving in these ways of knowing (SSP) before they had to stop performing due to COVID-19. For our purposes, what’s noteworthy in this case are these movements between playful forms of attunement that were shared within the group, and that, in this case were relatively strong even early in its history, with forms of more explicit shared practices being necessary for group advancement within a specific art form. In our experience, this trajectory of the group is the opposite of that reported by many individual improvisers, which frequently report on the need to “unlearn” or “unknow” certain forms of SSP that inhibit CAA.

Our data suggestively describe the temporal movements between shared social practices and collaborative affective attunements in the context of artistic performance and in service of group flow. In addition to seeing CAA temporally lead SSP, or vice-versa, within a single performance or within the history of the group, we believe that further study on a possible

array of relations between SSP and CAA may be necessary for understanding their entanglement as ways of knowing. Inspired by earlier work that does not locate affect outside of epistemic knowing (e.g., Jaber & Hammer, 2016), what may well be needed is broader “prepositional” conceptual vocabulary (e.g., before/after, with, over/under) to understand how practice and affect-based ways of knowing are performed and related spatially and temporally, beyond the more general claim of their entanglement.

Critiquing the “shared” of social practices and the “collaborative” of affective attunement

While seeking to understand the ways of knowing of a creative ensemble, and thereby seeking also to expand what counts as valued “knowing” in the learning sciences, we believe it is also important to critically question concepts like “shared” social practices and “collaborative” affective attunement with respect to the histories and identities, and among performers and audiences alike, and particularly with respect to potentially “unshared” and “non-collaborative” power relations, especially as these impact the improv experiences of players historically and currently excluded from the practice. We take seriously Seham’s (2001) critique that far too often “groupmind” accomplished among professional improv players has chiefly reflected the minds of white, heterosexual males. In the MRN scene players cited drawing upon different histories of church in a variety of denominations and regions of the U.S: Black Baptist, Pentecostal, Roman Catholic, Texas Revival, and West Coast Gospel churches, respectively. All of these histories contribute—with some moments of failure to “synch up” or accomplish experiences of “groupmind”—to the emergent MNR scene, which featured various elements of not only the shared social practices of different churches (e.g., preacher engaging the audience in call-and-response, hymn structures, choreographed dance steps), but different ebbs and flows of energies and tones of feeling (for example, shifting from the softer, mystical aesthetic which perhaps reflects Dave’s [Mother Nature] Roman Catholic heritage, to the stomping and clapping dance initiated by Samantha [one of the squirrels] that may more nearly recall her own experiences of Texas revivals). Yet while all of these U.S.-based white players had particular childhood experiences of church, one could imagine that a player who did not originate from a Christian background might have made their own contributions to the collaborative scene, perhaps bringing “unshared” social practice to bear. What’s more, given the living history of discrimination and exclusion against LGBTQ+ communities by Christian and other faith traditions, one can imagine that some queer-identifying players in the group may have had complicated or troubled associations with church, which might have infused

different sorts of feeling into what the MNR scene and significantly shaped how affects played out across it.

While this interaction between a group's capacity to develop SSP and CAA in relation to various axes of social difference and power—including national, racial, ethnic, linguistic, class, and gender identities and positions, along with regional and religious heritage—is beyond the scope of the paper, yet important for future work exploring the ways these entangled ways of knowing are also entangled in relations of power, identity, and possibility. In a conversation with the sole Black (pseudonym Irish) member of SS and Jane (a white-identifying woman) about issues of social difference in relation to “groupmind” to inform future research, both players affirmed that sexism and racism, along with differences among group members' identities and histories more generally, can impact an improv group's capacity to play together as a group. However, Irish also noted that that certain qualities of “the human experience” can facilitate a group's capacity to improvise at high levels (“regardless of your race, you might know depression. . .you can experience anxiety”), an observation we see as resonant with possibilities for future studies of CAA in improv and other settings. SS focus group members also noted certain differences among group members that at times influenced their possibilities for group flow. For example, one SS member explained how his own economic background, which differed from that of other group members, was at times a barrier to share the practices and affects of the group. Given that in other research, social-affective ways of knowing have been impacted by participants' racialized, gendered, and classed positions (Hennessy Elliott, 2020; Takeuchi & Aquino Ishihara, 2020) future work might seek to understand how SSP and CAA, and their entanglement, might be attend more closely to how systemic, structural, and interpersonal differences in identity and cultural power shape how a group comes into practice, and affect as shared and even potentially transformative.

Implications and future possibilities for collaborative arts research

Although our study is focused on ways of knowing within dramatic improvisation, we would expect that shared social practice and collaborative affective attunement would be related in complexly entangled and perhaps distinct ways in other forms of collaborative art. In fact, in our study of musical theater improvisation, our participants have often discussed how, on the one hand, the forms and structure of improvised musical theater made knowing in this genre quite distinct from non-musical theater improv; however, the music itself was a key resource for affective attunement. Future studies within collaborative art-making and performance from within may well illuminate how affective attunement functions in relationship to shared social practices in other artistic disciplines. Hollett et al. (2022) have recently undertaken a study in this vein by documenting how energies

circulating among a group of ballet dancers functioned to “evoke, circulate, and transform collective bodies to propel ensemble learning” (p. 56), as dancers learned to “tune in” (p. 48) to each other while improvising choreography.

Future studies of arts knowing and learning might explore how different histories of participation with certain genres of artistic practice—which, as in the cases above, often corresponds to different racial and/or religious social communities—might relate to a group’s ability to enter into CAA (at times causing tension or difficulty), or might serve as a resource for developing group-specific, even hybrid forms of SSP. For example, in the MNR scene, Samantha’s performance of a step that is a hallmark in musical theater (“four corners”) eventually combined with Mitch’s “call and response” hand gestures and embodied movements characteristic of Southern revivals. Drilling down in these moments of tension across artistic genres, which are likely reflective of different social histories and positionalities of group members, can be salient for those studying groups of performing arts—especially in the related art forms of dance and music—knowing to improvise as a collective. Keying into differences across artistic genres is also crucial for those seeking to infuse artistic practices into non-arts-based group settings. Solomon et al. (2022) modeled this type of attention to differences across historied artistic repertoires in their exploration of the variety of cultural dance resources (i.e., ballet, stepping, and krumping) that Black girls drew upon while making sense of physics.

In addition to presenting empirical findings, our study makes a methodological contribution to the study of group artistic practice by conducting a focus group which blurs the lines between a collaboratively-constructed analytical reflection and an improvisational performance in ways we find rich with possibility for future studies of group performing arts (especially music and dance). We knew, from previous interviews with dramatic improvisers, that many improvisers often enact foundational improv practices (e.g., deep listening, yes-and-ing) in conversation with other players. Researchers seeking to study group artistic practices might make the invitation to artists explicit to draw upon the practices or resources they use during artistic creation during data collection events (e.g., to draw upon the improvisational practice of sensing and following transmitted energies as they reenacted snippets of improvised scenes). Requesting that artist-participants bring instruments, props, or other material resources integral to their craft—as did SS’s Musical Director, by bringing a keyboard to the focus group—can also foster focus groups that function as artistic “collaborative research performance[s]” (Bosco & Herman, 2010). The setting of such performances might also be considered; for instance, how might dancers use a studio space with a mirror as a resource for re-sensing a moment of past performance to cooperatively embody new sorts of understandings about their practice? Additionally, future learning scientists might

extend upon our conceptualization of an improvised collaborative research performance of knowing in and through the arts to identify instances of past experience salient for study, perhaps paired with video-assisted self interviews as a form of “more-than-representational” (Carolan, 2008) approach to studying knowing-in-interaction, which fuses attention to embodied or verbalized action with less-easily articulated, even subconscious dimensions of group interaction (i.e., shifting energies, affective intensities).

A thorough treatment of the implications of SS’s development of SSP and CAA for other arts-based environments is beyond the scope of this paper. However, arts instructors or others creating knowing and learning opportunities for students of other ensemble-based arts—especially improvisatory forms of music and dance—might consider how to cultivate students’ capacities to interweave the “technical” (SSP) and affective (CAA) dimensions of their craft. SS members noted that they were initially more talented at those dimensions of improvisation associated with CAA, and had to “drill down” into mastering musical theater-specific genres, characters, and forms, through a combination of practice and coaching. Those designing arts-based knowing and learning environments might consider questions including, to what extent are certain discipline-specific knowledges (SSP) requisite to the ability for group members to come to develop new forms of CAA, and vice versa? What strengths with respect to SSP or CAA does this group already exhibit? How can I provide opportunities for group members to develop both ways of knowing, and inter-relate the two in practice and live performance? Arts instructors might also be wary that the modes of knowing associated with SSP may be easier to discuss than are those associated with CAA, as suggested by the more specialized set of concepts and vocabularies available to SS members to describe musical or musical theater disciplinary knowledge relative to the smaller set of words and metaphors they used characterize CAA (e.g., “vibing,” “telegraphing energies”). There is a danger that those elements of artistic practice that are difficult to talk about might be sidelined, neglected, or ignored (as is often true of social life more broadly). Yet our Findings suggest that a capacity for CAA among a group is essential to dramatic improvisers’ ability to collaboratively create an energized, satisfying show. We suspect this may also be the case for other forms of ensemble-based artistic practice, even while performers’ skills for affect attunement are not always explicitly foregrounded in arts-based teaching, knowing, and learning.

Coda: Knowing, unknowing and the body

While we have emphasized the complementary entanglement of shared social practices and collaborative affective attunement, it is important to recognize that the goal of group flow and attunement may also be in conflict with social practices that are shared. In the history of improv, this conflict is

apparent in the early work of Viola Spolin, an early teacher, developer, and researcher of dramatic improv. Spolin understood the significance of the body's relationship to affective attunement, and also located herself in response to forms of education that were overly constraining, disciplining, individualistic, and rational. Spolin's direct physical communication, or "physicalization" (Spolin, 1999) is a very close in its expression to the concepts of the affect theorists, where person-person and person-object relations are expressed in terms of the physical transfer of energy, at the level of the ensemble, and not through some "deep" access to the individual psyche or emotion. In this way, we see Spolin as engaging in a practice of "unknowing," (Vasudevan, 2011) raising questions that address fundamental assumptions, engaging in experimentation with "ways of knowing other than those with which we are intimately familiar and reasonably comfortable" (Vasudevan, 2011, p. 1157). In order to "wrest our modes of inquiry and our beings away from the clutches of finite definitions of knowledge" (Vasudevan, 2011, p. 1157), the stance of unknowing is an imaginative invitation to engage in knowing otherwise. As a mode of knowing in a group, we also recognize from our data that ways of knowing can be in conflict with one another. Jane, for instance, noted how she is a rule follower (also, a SSP of schooling) and at the beginning of her training was "really focused on listening to instructions and doing what they asked me to do, which, as you dive into improv, is not really the idea." Jane's "rule following" was initially an obstacle for her in entering into collaborative affective attunement. Holland et al. (1998) describe how unlearning ("dishabituation"), like habituation, is worked out through the body, an engagement in new ways of knowing with transformative power:

We unlearn bodily in the remove from the dominant to the emerging world, so that we return to the everyday, perhaps, with an altered subjectivity, an altered sense of who we are (p. 238).

We understand the body as having special resonance and a special role in transformative expansion and inclusion of ways of knowing, such as explored here. For group flow in dramatic improvisation, such expansion is not because one way of knowing is "embodied" while the other is not. Rather, while shared social practices and collaborative affective attunement both work on and rely on the body, they do so in qualitatively different ways. Moreover, to embodied knowing, collaborative affective attunement delimits the body as the group; this kind of knowing lives, and is practiced, together. In this way, knowing improv is not merely disciplining the body with new repertoires, but doing so in the context of opening up the body's capacity to know itself as permeable, and moveable, with other bodies.

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Appendices

Appendix A.

Table A1. Strawberry Superboom's modes of group knowing.

Shared Social Practice (SSP)	Collaborative Affective Attunement (CAA)
<p>Practices</p> <ul style="list-style-type: none"> a. Improv choices or repertoire of practices b. Structures: form, game of scene. c. Some life resource, ready to hand: <ul style="list-style-type: none"> a trope, TV, pop culture d. Models: musicals e. Tropes: characters, character relations f. Character: specific mannerism e. Knowledge of others' strengths in the group as individuals or as sub-groups f. Music transitions, musical genre, chord structure g. dance choreography h. Rhythm practices and coordination i. Theatrical techniques (e.g., breaking the 4th wall j. Naming emotion (e.g., mad, sad, happy) 	<p>Practices</p> <ul style="list-style-type: none"> a. Attunement to scene partners b. Quick observation, immediate knowing c. Feeling a character's perspective d. Changing or carrying energy in a scene e. Channeling or telegraphing to scene partner f. Felt rhythms
<p>Discourse/Terms</p> <p>drilling down, discipline, choices, coaching, conscious</p>	<p>Discourse/Terms</p> <p>hyperlistening, hypervigilance, groupmind, speaking one language, the messy, the organic, child-like, play, the visceral, magic, vibe, synapses going off, telegraphing, channeling, surprise, synergy, transmitting feeling, bringing [some kind of] heat, same wavelength, putting out energies, subconscious</p>
<p>Discourse/Terms</p> <p>drilling down, discipline, choices, coaching, conscious</p>	<p>Discourse/Terms</p> <p>hyperlistening, hypervigilance, groupmind, speaking one language, the messy, the organic, child-like, play, the visceral, magic, vibe, synapses going off, telegraphing, channeling, surprise, synergy, transmitting feeling, bringing [some kind of] heat, same wavelength, putting out energies, subconscious</p>