GETTING OUT OF A JAM:
COLLECTIVE IMPROVISATION IN POPULAR MUSIC

Christopher Martin Gupta

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ABSTRACT

Collective improvisation in popular music, ranging from modal jazz to jam-bands, often evinces a level of design and cooperation that seems impossible within an improvisatory context. Ensemble members improvise freely and yet coordinate their decisions by relying on cueing systems—audible routines that bridge the gap between individual and group agency. In this dissertation, I offer a theory of cueing systems and discuss the aesthetic and functional significance of them in Western popular music.

First, I argue that cueing systems consist of two basic components: a metric event and a salient pitch-based event. Coordinating these two cues opens a line of communication that enables players to share and act upon their intentions, such as to change keys or resume a composition. Second, I show how cueing systems can enhance our understanding of musical form in improvisation. Cueing systems enable the sudden and dramatic transitions that often characterize formal subsections. Thus, in collective improvisation, they function as formal seams. Building on this observation, I outline a theory of form for collective improvisation and provide two case studies. Third, collective improvisation challenges many traditional assumptions about musical ontology. Cueing systems, for example, can enable ensembles to transition seamlessly between compositions, destabilizing the nominal and ontological integrity of individual works. I suggest that the collective intention required to execute a cueing system can help resolve these challenges.

Interestingly, artist interviews reveal a very different perspective on collective improvisation. Musicians often report that the process is accidental and inherently mystical. There exists a striking asymmetry between musicians’ accounts of the music and the processes
observably at work in the music. Thus, finally, I discuss this divergence between analysis and artist interviews, and its significance in the unusual case of collective improvisation.
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FOREWORD:

WHAT IS A JAM BAND?

This dissertation targets a paradox in collective improvisation: ensembles operate cooperatively, as if with one mind, while constituent individuals operate autonomously, free to pursue their independent agendas. This paradox crosses genres, including jazz fusion, funk, and blues. But the ensembles most associated with this mode of improvisation are jam bands, whose style of playing encompasses all these genres and more. What is the relationship between jam bands, genre, and this paradox of collective improvisation?

Genres are often identified by traits such as musical style, instrumentation, and lyrical content. Jam-band music is difficult to categorize because it does not cohere around the usual musical markers. The Grateful Dead and the Disco Biscuits are cases-in-point: both are (by popular consensus) jam bands, yet the former is a product of the Haight-Ashbury hippie movement, with a clear indebtedness to folk and Western rock, while the latter is a product of the Philadelphia rave scene, with musical influences including trance and electronic dance music. At first glance, these two bands seem to share few similarities, and one might conclude that they do not belong to the same category. Jam-band music seems immune to the very criteria that usually clarify the boundaries between genres.

More recent scholarship has defended the centrality of social circumstances to formulations of genre. As Franco Fabbri has argued, understanding genre requires a pluralistic approach that observes social factors as well as musical style traits. ¹ David Brackett, too, has identified “nation, class, race, gender, sexuality, and so on” as examples of non-musical traits

bearing on genre. This more nuanced view of genre acknowledges the way in which a musical
genre can become associated with the social milieu that originated or shaped it; for example,
global audiences often associate hip-hop with African-American culture, particularly that of the
Bronx.

Social circumstances may help to inform a conceptualization of jam-band music as a
genre, but first, a logical puzzle stands in the way. In order to examine social circumstances, one
needs to identify representative scenes or events surrounding jam-band music. But jam-band
music itself is difficult to define: the bands draw from a variety of genres from jug bands to
EDM, making it difficult to pinpoint a representative example and distinguish them from those
that are not.

The treatment of jam-band music in musicological literature reflects its uneasy
definition. For example, John Covach orients the “jam-band scene” as an offshoot of a larger
movement in the 1990s to revive the live aspect of classic rock. Interestingly, Covach includes
pop bands like the Spin Doctors and the Dave Matthews Band within this movement. He goes on
to note, “Like the Allman Brothers and Grateful Dead before them, these [jam] bands feature
long, improvised solos, often making their performances the best of these groups’ productions.”

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4 See my discussion of this problem and subsequent challenges: Chapter 4, “On the Vocabulary of Musical Ontology.” See also: David Brackett, *Categorizing Sound: Genre and Twentieth-Century Popular Music* (University of California Press, 2016), 4. He writes, “Emphasis in these situations tends to rely more on retroactive grouping based on what is already known or assumed to be the contents of a genre rather than on the emergence of a category during a particular historical period and the conflictual contemporaneous understandings that often compete while a genre is becoming established.” However, Brackett also references this criticism as a mere tautology, suggesting that it is not a serious obstacle to a practical approach to genre. See Brackett, *Categorizing Sound*, 7.
6 Covach, *What’s That Sound?*, 529.
This way of framing the jam-band scene reveals certain assumptions. First, by classifying this music by its reliance on long, improvised solos, Covach acknowledges the prominence of improvisation within the style, but does not specify the collective nature of that improvisation. Second, by placing their live performances on equal footing with the bands’ other “productions,” Covach identifies the importance of live and virtuosic performance to the genre, relative to commercial recordings. Finally, by suggesting that the Allman Brothers Band and the Grateful Dead are not leaders of jam-band music but influences on it, Covach draws temporal boundaries on the genre, prioritizing them over stylistic ones.⁷

A similar ambivalence toward the genre surfaces among musicians as well. Butch Trucks, the late drummer for the Allman Brothers, has written on the subject thus:

Of course, you will find that there is probably not a band out there that will admit to being a “jamband.” That doesn’t change the fact one iota that they are a jamband. We must have labels. Gregg Allman has solved his dislike of the Allman Brothers Band being called a jamband by stating that we are a band that jams. Semantics. Let us say that what these bands share is: an ability to play and a seriousness about their music that maximized musicianship and minimized showmanship. That’s Butch’s “definition of jam music in 15 words.”⁸

Trucks unloads a surprising wealth of information in these fifteen words. His emphasis on musicianship over showmanship clearly resonates with Covach’s definition. But he also applies a stigmatic quality to the label, as if its connotations overshoot its literal denotation (a “band that

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jams”), when he writes that “of course” no band out there would admit to being a jam band.

Gregg Allman would later echo that rejection of the label:

We are not a jam band… We are a band that jams, but we are not a jam band. I’m so tired of hearing that… You know what a jam band is? That’s a band that can’t seem to get it together to make an arrangement, so they light the fuse and let it go. We are a band that jams, but that ain’t all we do.⁹

Allman assigns a secondary status to jamming, as if it were the provenance of less capable musicians who “can’t seem to get it together.” Butch Trucks would probably disagree with that assessment, pointing to the musicianship required to jam. Yet both players highlight the ability to improvise as a defining feature of jam bands.

Improvisation thus occupies a central but not exclusive position within the genre of jam-band music. Trey Anastasio, lead guitarist of Phish, has articulated this value and, further, ascribed its origins to the Grateful Dead: “we’ve kind of been cutting [the jams] down to like one per set, two per set. But we do [live extended jams]. That’s definitely where the Grateful Dead connection comes in.”¹⁰ The persistent closeness of the jam-band scene to the Grateful Dead suggests that the genre surfaces prior to the 1990s and overlaps with the psychedelic movement of the 1960s.

An important (and most written-about) feature of Grateful Dead history is the communal aspect of their fandom. This fan community had its roots in the San Francisco neighborhood of

Haight-Ashbury, where the Grateful Dead grew their fame in the midst of the Summer of Love of 1967. While the so-called hippies who gathered there were not so singularly focused on peace and love as contemporary written records have suggested, they did revel in sensation: loud, electric music for the ears, vibrant light shows for the eyes, and plenty of acid (a.k.a. LSD or lysergic acid diethylamide) for the brain. A live Dead show would have been the quintessential experience of such revelry. Fans of the Grateful Dead, or Deadheads, began following the band from show to show; as the Dead developed a reputation as one of the most prolific touring bands in history, Deadheads followed the band on tour for months or years on end. Their communities formed their own economic systems, selling food, T-shirts, etc., while living out of microbuses. In that context, the freedom and spontaneity of collective improvisation added another dimension to the experience: the feeling of being on the edge of sublime discovery. As Graeme Boone has written:

[T]he emphasis of the Dead on open-mindedness and spontaneous freedom and on the constant, shifting possibilities of meaning arising from ambiguity gives this factor of imminent transcendence a particular importance. The searching quality, the quality of being on the edge of a special, unpredictable, and highly meaningful experience in the moment, might be called virtuality.

Or, in more psychological terms: “Large numbers of Deadheads report a psychic connection with the band, often reporting Jungianlike synchronicities and other esoteric phenomena in the concert

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setting.”\textsuperscript{13} The inseparability of the Grateful Dead from their caravan of fans extended the concert venue beyond the literal, physical confines of the musical stage. Deadheads embodied the dual natures of the Grateful Dead as both a musical and countercultural movement.

The jam-band scene of the 1990s and beyond, in reactivating its “rock roots,” provided a new outlet for the itinerant fandom of Deadheads.\textsuperscript{14} Following the death of Jerry Garcia in 1995, Deadheads migrated to spinoff bands, such as Further and Ratdog, as well as to newer ensembles, like Phish, transferring the attitudes, sartorial standards, and vibe of the hippie movement to these fan communities.\textsuperscript{15} Today, itinerant communities of fans continue to assemble in the sprawling parking lots outside concert venues. Like the gatherings of Deadheads before them, these “parking lot scenes” have a barter economy in which fans will trade food and necessities for homemade merchandise, recreational drugs or a ride to the next show. On multiple occasions, fans have told me that they have been following this or that band around for over a year, stopping only to make enough money to resume the tour. These fans demonstrate a remarkable commitment to the music by structuring their very lives around its pursuit.

By positioning the live performance as the essential locus of jam-band music, Deadheads and their progeny are virtually inseparable from the concert events that host them. Not every audience member identifies with the Deadhead movement, but all come into some degree of contact with it. Outside the venue, simply by parking the car, attendees begin the experience from the middle of the parking lot scene. Within the venue, the thick smell of marijuana smoke (and the subsequent contact high) precludes the possibility of passive participation. As a result, the musical and social dimensions of witnessing a jam-band event overlap significantly.

\textsuperscript{14} Many of the observations in this paragraph reflect anecdotal evidence or personal experiences.
\textsuperscript{15} Boone, “Dark Star,” 171.
Including social factors like these helps to clarify why a band like the Allman Brothers might attach a stigma to the genre of jam-band music. The culture surrounding jam bands, via their inherited legacy of Deadheads, bears the time, place, and movement of the 1960s Haight-Ashbury hippie scene. As evidenced in the *Rolling Stone Album Guide*, these associations can have a negative streak: “Deadheads—ex-hippies or tie-dye wannabes—celebrate the Dead’s myth of genial counterculturalism. The songs provide the excuse for the revelry—and they remain songs whose appeal is all but inscrutable to non-initiates.” Thus, despite the shared emphasis on improvisation and virtuosity, the Allman Brothers Band apparently wanted to distance themselves from so particular an identity.

However, the collective nature of jam-band music and the itinerant communities that follow them have deeper connections. In a sense, the utopian, socialist ideals of the countercultural movement have become subtle influences on the performance and reception of jam-band music. Jam-bands embrace an egalitarian style of musical performance that celebrates collective harmony and resonates with the cooperative, shared consciousness of Deadheads (and their successors). In other words, the politics, practice, and reception of jam-band music are overlapping style traits.

Lastly, jam-band music may encourage this mode of audience participation by heightening the requirements for musical consumption. Neophytes can quickly tire of jam-band music because the music becomes much more enjoyable only after one becomes familiar with a band’s repertoire and improvisatory habits. Part of the pleasure of listening to jam bands entails searching for clues within long, improvisatory sections as to how a band crafts its performances and negotiates a set list. This search requires a fairly deep fluency with a particular band’s style,

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17 Many of these observations, again, reflect anecdotal evidence or personal experience.
which takes time to develop. As a result, new listeners can find the music alienating, like an inside joke.\textsuperscript{18}

As a new initiate to the genre, my listening habits reflected these high requirements for consumption in three ways. First, I began to monitor which songs I had seen live by which bands. Fans of jam-band music attend concerts not only to witness their beloved ensembles play their favorite songs, but with the hope of catching a rarity: for example, a composition that the band plays just once or twice per year, if that. In fact, some listeners will engage in “set list games:” competitions in which, prior to a concert, fans predict and wager on which songs will be played and in what order.\textsuperscript{19} In making these predictions, fans rely on a combination of familiarity with the band and analysis of recent set lists. Thus, not only do they foster and maintain surprisingly detailed records of a single band’s performance history, but they internalize that history in order to anticipate future decisions.

Second, I began to collect recordings of live performances and evaluate them both by the quality of playing and the quality of recording. Jam bands, including the Grateful Dead, have allowed attendees to bring amateur recording equipment and produce bootlegs of their live performances—provided those attendees make the recording freely available. Fans of jam-band music not only search for these bootlegs, but can easily distinguish amateur “taper” recordings from professional “soundboard” recordings.\textsuperscript{20} My own collection of shows by the Disco Biscuits, for example, included approximately 260 different recordings, all of which I had carefully screened and subsequently digested.

\textsuperscript{18} The steep learning curve to jam-band music may account for the harsh, negative reviews of jam-band music by non-initiates like the authors of the \textit{Rolling Stone Album Guide}.
\textsuperscript{19} See, for example: the “games” page on fanbase websites like \url{www.phantasytour.com}.
Finally, I created a jam band with my friends. In fact, our early attempts to reproduce performances by bands like the Disco Biscuits and Phish triggered my interest in this subject. We could play the composed parts and invent our own jams easily enough; the transition from jam back into composition was, to us, impossible. One day I suggested that we break from playing to discuss how we could handle the transition from jam to song. The guitarist responded: “Gupta, just let the jam bring itself to an end.” The idea that “the music has a life of its own” would resurface continually as I worked on my dissertation. Yet for a group of undergraduates trying to reproduce that style of playing, the music was apparently lifeless.

Jam-band music resists categorization because its constituent traits are so decentralized. Since the death of Jerry Garcia and the rise of Phish, jam bands have continued to explore other musical styles and influences, spanning reggae, heavy metal, and bluegrass. The case of jam-band music can enrich an investigation into the nature of style and genre because it exposes the overlapping lines between categories and qualifiers. Jam-band music, like its practice and reception, achieves coherence through collectivity.
I

DEMYSTIFYING GROUP AGENCY:

CUEING SYSTEMS IN COLLECTIVE IMPROVISATION IN POPULAR MUSIC

Introduction

Collective improvisation in popular music occupies the space between two modes of performance: structured improvisation featuring a soloist with accompaniment, such as bebop, and the openness of free jazz. The 1960 hit “Spoonful” by Chicago blues musician Howlin’ Wolf is an example of the former. With the support of his accompanying band, Wolf improvises melodies on the guitar over the alternating verse-chorus song form for two and a half minutes. The recording then fades to silence, as if the listener has walked out of a live performance, never to know just how much longer Wolf and his band would play. Indeed, when British blues-rock band Cream introduced “Spoonful” into their live repertoire six years later, their renditions often spanned fifteen to twenty minutes. However, the dramatic increase in song length was not the result of a string of solos, as one might expect from Howlin’ Wolf, but of the insertion of a long, instrumental improvisation. The improvised sections of Cream’s performances abandoned the verse-chorus form of the song in favor of an implied one-chord vamp. This harmonic openness freed the band to experiment, producing wide variance in the length of their performances, with some renditions barely exceeding the original, as the band could abbreviate or expand the improvisation as their musical whims and intuitions directed them. More interestingly, with no thematic or harmonic form to maintain, both the lead guitarist and the bassist were able to

22 See, for example: Cream, Star Shines, Mid Valley (MV-143), 2002, compact disc, Liner Notes; Cream, Wheels of Fire, Polydor, 1968, compact disc, Liner Notes.
improvise together, creating unpredictable combinations of motives and modalities. Collective improvisation, like this, belongs somewhere between the two modes of improvisation.

The musical processes at play in Cream’s “Spoonful” are a form of “jamming,” an activity with a long and varied history across popular music in the twentieth century. On April 26, 1969, rock legend Jimi Hendrix prefaced the opening of a concert by saying,

All right, to be fair with everybody, we’re going to start with a little jam, ok? It’s a thing that was written by a couple of Swedish cats, Hansson and Carlsson, and they recorded it in Sweden. It’s a thing called “Tax Free”, but I think we’ll call it . . . [trails off] . . . I don’t know, let’s just jam . . . something like this here . . . [band starts playing] . . .

What followed featured the unpredictable combinations of mode and motive typical of collective improvisation, but did not adhere to the same formal organization as “Spoonful.” In that example, Cream took an original song and inserted an improvisatory section of unplanned length in the middle. “Tax Free,” on the other hand, already features an improvisatory section in the middle. The Hansson and Karlsson original consists of two alternating verses and choruses followed by a six-minute jam that culminates in one more verse and chorus. In order for the Jimi Hendrix Experience to jam in the same vein as Cream, all the band would need to do is empty the central improvisation section of its original content and replace it with their own ideas and motives. In fact, in their cover of “Tax Free” recorded on May 1, 1968 and released after Hendrix’s death on the album War Heroes, the band did exactly that.

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24 “Hansson” and “Carlsson” refer to the last names of the two Swedes; “Hansson and Karlsson” refers to the name of the band.
The April 26, 1969 performance of “Tax Free,” on the other hand, did not constrain novel, improvisatory material to an instrumental middle section, nor even preserve the original alternating verse-chorus form. Instead, the jam consisted of the seemingly ad hoc dismantling of the song, as twelve-bar verses and eight-bar choruses were stretched into twenty- to thirty-bar episodes, all with varying degrees of adherence to the Hansson and Karlsson version. The result was a performance that displayed the kind of unpredictable combinations of motives and modalities found in Cream’s “Spoonful,” but across the entire song. For Jimi Hendrix, “jamming” is an improvisatory activity that permeates all aspects of performance, thereby dissolving the distinction between composition and improvisation.

The Hendrix example hints at some challenging questions: if the individual band members are extending the original form, seemingly ad hoc as they individually see fit, then how do they consistently move from part to part together? If the band did not predetermine the total length of the performance, how are they able to end simultaneously? Musical events like transitions and endings require ensembles to function cooperatively, as a group agent. Yet group agency—the capacity of groups to share an intention and then act upon it—has basic requirements that seem incompatible with collective improvisation, such as the requirement that individuals communicate their intentions among each other and deliberately agree upon them before acting. If individuals are improvising and therefore forming and acting upon their intentions in quick succession, how could they possibly have time to share an intention? How could group agency survive in an improvisatory context?

Jazz—perhaps the genre most intimately associated with collective improvisation in Western popular music—seems a natural home for jamming. One example is the bebop jam session: a private, impromptu group activity that took place outside of musicians’ usual
commercial engagements. These were casual gatherings, similar to Hendrix’s humble “little jam,” in which musicians could collaboratively experiment, unencumbered by the limitations of onstage performance. Quoting jazz pianist Patti Bown, Paul Berliner writes: “musicians ‘could really develop there. Sometimes they would really get a thing going, and they would keep on exploring an idea… [They] sometimes played a single tune for hours.’” The personnel for these happenings was also improvised. People could come and go, creating spontaneous discoveries together and contributing to the collective output with an ever-changing ensemble.

Despite its apparently enhanced extemporaneity, the bebop jam session carried over some practices from the live, staged context, extending pre-existing frameworks that help to facilitate group agency. Ensembles continued to rely on a select repertory of popular standards, such as the 12-bar blues and George Gershwin’s “I got rhythm,” never fully abandoning a loop of fixed harmonic changes. More importantly, participants were not all fully free to improvise at the same time. Horn players took turns soloing over long strings of choruses, while the other ensemble members maintained the harmonic progressions and offered supportive figures in the background. Endings would either rely on basic established formulas to reach a final cadence or simply dissolve into chaos. In short, jam sessions were possible only through routines “so thoroughly internalized by the musicians that they [were] virtually invisible.”

An inherent hierarchy undergirds these routines: first between soloist and accompanist, and second, among accompanists, between horns and rhythm section. Of course, even the accompanying parts included improvisatory elements, but these were relegated to secondary

26 Berliner, Thinking in Jazz, 42.
27 DeVeaux, The Birth of bebop, 203.
roles. Accompanists supported the soloist, and the rhythm section stayed out of the way until the end of the session, when they might get a turn to take a solo. In this mode of collective improvisation, only one participant—the soloist—can make autonomous decisions and act upon them at a time. More telling are the endings, inevitable structural events that demand of group ensembles the impossible: to act with one mind. The formulas that result betray the existence of the “virtually invisible” routines that characterize jam sessions, and suggest that some collective improvisation might not be so improvised after all.

Of course, the world of jazz extends far beyond the bebop jam session of the 1940s–50s, and other, more persuasive examples of collective improvisation abound. Free jazz, another world of music that a single moniker struggles to contain, certainly eschews the formulas that pervade the bebop jam. Not surprisingly, what binds free jazz together as a genre is the absence, not the presence, of various musical parameters such as meter, harmony, and form. As Ekkehard Jost has pointed out, “With the advent of free jazz… a large number of divergent personal styles developed. Their only point of agreement lay in a negation of traditional norms.”  

Guitarist Derek Bailey, for example, describes the evolution of his music from conventional jazz to total improvisation as gradual attacks on the frameworks of rhythm and harmony. He writes, “Our earliest ‘free’ improvisations had a definite modal orientation. This was probably the easiest way to start. Except, of course, that it wasn’t free. It was modal.” Embedded in Bailey’s remembrance is the intuitive principle that framework and freedom are incompatible. Around the corner from this fixation on freedom in music is freedom between musicians, suspending the obligations musicians owe to each other. Indeed, Bailey later refers to a “feature of some free

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improvisation which might be described as mutual subversion.30 The chaos that results suggests that some collective improvisation might not be so “collective” after all.

Whereas the bebop jam session responded to the limits of group agency by either injecting formulas into the performance practices or succumbing to chaos, free jazz of the late 1970s avoided those limits altogether by shifting the objectives of performance. Shared intentionality—the state in which multiple individuals share the same intention in a group mentality—is not a requisite of free improvisation, and even those rare moments when the group seems to share an intention are not marked as a success because the alternative is not a failure. Both bebop and free jazz circumvent the incompatibility of group agency in collective improvisation, but in opposite ways. Bebop suspends the improvisatory element; free jazz suspends the collective element.

Thus, collectivity comes in different forms and is one way to distinguish modes of improvisation. The Cream and Hendrix examples are compelling because, as in certain examples of free jazz, every ensemble member is free to improvise autonomously, and Yet as in bebop, the ensemble accomplishes certain compositional or composition-like events, such as transitions and endings. These bands, and others like them, seem to reconcile the individual freedom necessary for improvisation with the cooperative interactions necessary to operate as a group agent.

Needless to say, these ensembles do not actually reconcile these contrary musical values; to do so is logically impossible based on observable facts (such as, musicians cannot read minds and cannot predict the future). Instead, some improvisatory ensembles have expanded the invisible routines in their performance practices to include those moments that require robust, shared intentions. These are the moments, such as transitions and endings, which usually require preparation or rehearsal to properly execute. The result is a mode of improvisation, as evinced by

the “Tax Free” example, which integrates composed sections and improvisatory spontaneity with remarkable fluidity.

The invisible routines at work in this particular mode of improvisation highlight a musical device present in many styles of music but particularly refined here: cueing systems. Cueing systems are sequences of deliberate musical events involving two or more people that initiate a collective action. With them, improvisatory ensembles appear to carry out the impossible task of meeting the requirements of group agency without the aid of a verbal or gestural system. A musical language is at work, hidden yet discoverable in the live performance practices of these artists. This dissertation seeks to find it.

Demystifying Group Agency

Perhaps in reaction to the limited authority that individuals have over the total musical product in collective improvisation, some musicians describe their experiences as performers in magical, mystical language. Jerry Garcia, lead guitarist of the Grateful Dead, has captured the spirit perfectly in an interview with Derek Bailey:

This is part of the tradition of music, where music comes from. A magic of one sort or another. For us, for the Grateful Dead, that has been part of what’s kept us going all this time. It’s sort of stumbling into this area where there’s a lot of energy and a lot of something happening and not a lot of control. So that the sense of individual control disappears and you are working at another level entirely. Sometimes this feels to me as
though you don’t have to really think about what’s happening. Things just flow. It’s kind of hard to report on but it’s a real thing. I mean we’ve checked it out with each other and after twenty-five years of exploring some of these outer limits of musical weirdness this is stuff that we pretty much understand intuitively but we don’t have language to talk about it. But it’s reported back to us by people in the audience too so this is one of those things where we’re sort of collecting data without really knowing quite where it’s leading or what it’s about but we feel a certain custodian relationship to it. It’s not something that we’re creating exactly, in a way it’s creating us. Musically speaking we’re not really making decisions about it and we certainly don’t discuss it. It’s something that breaks out every now and again. We can’t make it happen either. It defies analysis but it’s certainly something to wonder about.31

Within this quotation, Garcia describes the unpredictable nature of collective improvisation in a variety of ways: it flouts individual control; it flouts individual thought. The music is an entity, a medium accessible only by intuition and never by reason. Garcia even goes one step further by suggesting that the music creates the musicians, inverting the usual relationship between art and artist.

Garcia also insists that this musical magic, by its very nature, cannot be any other way. Not only does it resist analysis, but it resists the language of analysis. Nevertheless, the Grateful Dead actually does exactly what Garcia claims it does not: it makes decisions and creates music. As I intend to show throughout this dissertation, close analysis of the Grateful Dead’s live performances reveals observable patterns in the improvisatory sections, highly suggestive of

31 Bailey, Improvisation, 42-43.
design, albeit intuitive and spontaneous. The band shapes the music, irrespective of its recognition or denial of its own agency.

The incongruity here may stem from the assumption that if no single band member feels control over the musical product, then the music must be uncontrolled. Following this assumption leads to the dubious conclusion that music has a mind of its own. Alternatively, a more nuanced understanding of agency and group agency leads to another conclusion: ensembles rely on collective mechanisms, like cueing systems, so effective that individuals mistake them for intuition. In the remainder of this chapter, I will evaluate this claim. First, I will discuss and build upon the existing literature on agency, group agency, and shared intentionality. Second, using transcriptions of live performance, I will provide examples of individual and group agency in action, precisely where the musical “magic” seems to take over. I argue that demystifying group agency reveals the unusual ways in which collective improvisation challenges our basic assumptions about improvisation, musical form, and even musical ontology.

**Agency, Group Agency, and Shared Intentionality**

Any foray into the world of personal agency should begin with a review of that concept and of its many implications. “Agency,” at its core, addresses the basic capacity to act, and permeates a staggering number of fields in the humanities and social sciences. In the hands of specialists, the concept of agency has developed into a wide variety of particularized (and occasionally incompatible) usages. Contradictions exist even among the established musicological usages, as scholars apply “agency” both literally to actual musical actors, such as performers, and metaphorically to phenomenal non-actors, such as instruments and motives.

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In Edward T. Cone’s *The Composer’s Voice*, for example, “agents” refer to instrumental characters and assume a dramatic, albeit admittedly metaphorical role: “Like the characters in an opera, [agents] must obey the formal demands of the music; but again like operatic characters, they must appear to move freely—to compose their own parts, as it were.”[^33] Building on this work, Fred E. Maus has pointed out that bringing a full philosophical account of agency to fictional musical agents results in highly subjective, indeterminate “characters.”[^34] Seth Monahan, in response to this work by Maus, identifies types of musical agency that “regard musical objects or gestures as volitional, as purposive, in such a way that it is indicative of psychological states.”[^35]

For a novel exploration into group agency and collective improvisation, the concept of agency should meet two criteria: 1) it should be consistent for both individual musicians and collective ensembles; and 2) if it is borrowed from other contexts, it should withstand a rigorous audit of its potential biases or blind spots. The first criterion preserves methodological consistency. The impetus for demystifying group agency (and of this dissertation in general) is the apparent scalability of agency from the level of the individual to the level of the ensemble. In order for this observation to be meaningful, both levels must rely on the same conceptualization of agency. Moreover, in the absence of this consistency, the second criterion becomes unenforceable; individual agency serves as the test case for collective agency of the improvising ensemble.

The second criterion acknowledges the possibility that the concept as optimized by one field may not suit the intricacies of another. For example, sociologist William Sewell, Jr., has defined agency as “the capacity to transpose and extend [generalizable procedures applied in the

enactment/reproduction of social life] to new contexts.” In contrast, psychologist Albert Bandura has defined agency as being able to “influence intentionally one’s functioning and life circumstances.” Despite their differences, both definitions elaborate upon the capacity to act. As such, while adopting the treatment of agency in sociology or psychology or any other field without review would be problematic, the existing scholarship in those fields can surely inform an investigation into collective improvisation.

Sociologists, for example, have long been aware of the mysterious gap between individual intentions and collective structures. As Emile Durkheim presciently wrote in 1901:

If, as is granted to us, this synthesis *sui generis*, which constitutes every society, gives rise to new phenomena, different from those which occur in consciousnesses in isolation, one is forced to admit that these specific facts reside in the society itself that produces them and not in its parts – namely its members.37

Jerry Garcia’s words would be in agreement with Durkheim’s belief that a collective consciousness is distinct from the consciousness of each individual. Like societies, ensembles are highly social microcosms, in which individual expectations for each other can vary and fluctuate.

The role of intention within the capacity to act may explain, at least in part, the apparent gap between individual and group agency. Philosophers have been quick to point out that to define agency as “the capacity to act” casts far too broad a net; even antibiotics are agents in the

sense that they “act” upon infections. The definition fails to address the specifically human nature of agency: namely, the presence of intention. Instead, most philosophers endorse the definition as “the capacity to act intentionally.”

However, sociologists have also long been aware of the porous boundaries between intentional mental states and representations of the world, that is, physical artifacts. The interrelation between mental states and physical objects motivates the viewpoint that even non-actors can have a conditional form of agency. According to Andrew Martin, “the agency [Latour] claims objects to have is only that which humans have given them.” Collective improvisation offers some immediate parallels to this idea: when, during a performance, a keyboardist records his/her own part onto a looping station and then sets the device to play the excerpt back indefinitely, then it can be said that the keyboardist has imposed a conditional capacity to act upon the looping station. Thus, when Edward Klorman identifies the agential status of “personas” within a string quartet, he implicates the agential status of the human composer who put them there.

The significance of this observation can be felt in the methodological approach of transcription and analysis. From an auditory perspective, the looping station and the keyboardist are nearly indistinguishable. So, if transcription is to be taken as a primary text, then the

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conflation of human and nonhuman actors in an account of group agency may be a practical inevitability.

Even as basic a definition as “the capacity to act intentionally” presents certain potential obstacles for group agency; groups may not be able to form intentions in the same way as individual human minds. The very concept of a “group mind” or “collective consciousness” may be little more than a turn of phrase.\(^{43}\) Moreover, the deliberative process that an individual can undergo as he or she arrives at an intention or belief finds no equal in group dynamics. Thus, in this dissertation, care is taken to refer only to “first-order agents”—actual human actors (i.e. improvising musicians) that assume control over themselves and their contributions to the collective output.

An advantage to this approach is to focus on the intentional status of various actors, especially given that intention is both the minimum requirement of individual agency and, it seems, a near-unobtainable goal for group agency.\(^{44}\) Consider a few examples:

1. On a sunny afternoon, you decide to eat lunch in the courtyard outside your office building where, it turns out, a dozen other people had the same idea. You are surprised by a sudden outpouring of rain, which drives you and everybody else back indoors at the same time.

2. After a disappointing election season, you hear about and decide to join a protest


downtown. Upon arriving, you participate by walking alongside other protesters and by chanting the same slogans.

3. You attend a public forum at City Hall, with the hope that you might persuade elected officials to vote for an important proposition. You listen to others’ points of view, respond pursuant to reason, and ultimately convince the State to act in line with your interests.

All three cases target a specific mode of group agency, and yet meet different measures of intentionality. In the first example, while you technically had the same intention as everyone else—to eat outside and then to flee the rain by running inside—you did not necessarily share that intention with other people. Likewise, in the second example, while you may have shared the same general intention with everyone else, your actions probably fall in between deciding what to do and being told what to do.45

The first and second examples lack what the third example emphasizes: a deliberative process of sharing intentions and acting upon them. Striving to reach a consensus through a discursive, democratic debate before acting captures the idea that in order to do something as a group, individual intention must extend to a group mentality. As philosopher Christopher Kutz explains, “jointly intentional action is primarily a function of the way in which individual agents regard their own actions as contributing to a collective outcome.”46 By emphasizing individual intention within a group mentality, Kutz makes the critical distinction between individual contribution and individual control. Unlike control, “contribution” provides another avenue for

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45 The absence of a decision-making procedure is just one aspect of the mob (or “random group”) mentality that makes it an especially challenging test case. For a lengthier discussion, see: Virginia Held, “Can a Random Collection of Individuals be Responsible?”, in *Journal of Philosophy*, 67 (1970), 471–481.  
individual intention to survive a collective structure. Precisely because improvisation suggests a lesser degree of planned intentional coordination, observable collective actions (as opposed to individual ones) are highly suggestive of shared intentionality. Group agency in collective improvisation relies on the central idea that individual intention maps onto individual contribution; individual control is a relevant though nonessential standard of participation.

Surely, the constituent members of the Grateful Dead were united in their intentions to jam, even if their more specific visions for that activity (what Michael Bratman calls a subplan) differed. Moreover, because this is an improvisatory context, individuals would have a very short timespan in which to anticipate and respond to each other’s subplans. Sharing and agreeing upon an intention requires having the advance time to do so. As the term “subplan” implies, collective activity begins as a plan in the mind. Thus, Garcia’s ascription of agency to the music itself is not just a reaction to a lack of control over the total improvisatory output, but also to the limited foreseeability of competing visions for the jam and indeed of one’s own contribution to the music.

The foreseeability of future events reflects their determinacy: the precision with which one can anticipate when a musical event will occur and what that musical event will be. Generally, the musical phenomena that help to clarify this information operate over short temporal spans. The appearance of a dominant seventh chord, for example, can imply the future appearance of a tonic chord. Moreover, in conjunction with other contextual details such as metric placement, dominant chords can specify when a tonic chord will appear. This combination of musical events is fairly determinate, although only throughout the relatively short duration of time in between them. As Christopher Hasty notes in Meter as Rhythm, the durational ranges of

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determinate musical events can vary, albeit narrowly.\textsuperscript{48} In improvised music, however, determinate and indeterminate musical parameters operate across long temporal ranges, spanning minutes and even tens of minutes. For example, the appearance of a dominant pedal can also imply the future appearance of a tonic chord. Yet ensembles routinely delay the resolution of dominant pedals by inserting solos of unspecified length toward the end of their jams. The presence of improvisation in performance can dislodge the usual sources of information that clarify what will happen and when.

Cueing systems respond to this problem by helping individual players resolve the indeterminacy of future events: in other words, to foresee the unforeseeable. If future events involve both a when-element and a what-element, four basic conditions arise in which a cueing system might operate: players know both what will happen and when, players know only what will happen or when, or players know neither what will happen nor when (Figure 1).\textsuperscript{49} These four conditions occupy a spectrum, in which one pole maximizes indeterminacy and features only unknown variables, and the other maximizes determinacy and features only known variables. Construed this way, performances practices that enhance the unknown variables would call for a cueing system capable of managing greater indeterminacy. The absence of determinate musical parameters calls for a sophisticated system of reading and responding to various musical cues and patterns.

\textsuperscript{48} Christopher Hasty, \textit{Meter as Rhythm} (Cambridge: Oxford University Press, 1997), 78.
\textsuperscript{49} This taxonomy is developed by Benjamin Brinner in \textit{Knowing Music, Making Music: Javanese gamelan and the theory of musical competence and interaction} (Chicago: University of Chicago Press, 1995), 185-6.
A cueing system that resides on the more determinate end of the spectrum can be found in the familiar example of the cadenza in a classical concerto. A soloist fills a dramatic pause at the end of a lengthy composed piece with a virtuosic and improvised finale. The other performers in this case, the conductor and members of the orchestra, know the length of the cadenza only within vague conventional limits (provided the cadenza is actually improvised). Length is a quasi-indeterminate parameter. On the other hand, the soloist is usually obliged to end the cadenza with a highly recognizable gesture: the cadential dominant with a trill. The orchestra benefits from a determinate harmonic (and melodic) parameter in its effort to rejoin the soloist and successfully transition from an individual mode of performance to a collective one. A reliable harmonic cue and limits on the length of the cadenza are sufficiently determinate to temper the rigors imposed on the cueing systems that enable the ensemble to rejoin the performance.

The robustness of a cueing system responds not only to the indeterminacy of future events, but also to the challenges associated with the divisions of the ensemble into individual
and collective parts. For example, the classical concerto and bebop jam session share a similar organizational breakdown of the ensemble into one solo (i.e. individual) part, and one accompanying (collective) part. The resulting hierarchy simplifies the logistics of who does the cueing and to whom. In contrast, the democratic breakdown of improvising ensembles into multiple individual agents complicates the matters of who and whom. Multiple people can deliver a cue to multiple intended recipients.

In turn-based improvisatory music, such as bebop, the who-element is uncomplicated because only one person signals transitions and endings at a time. In other words, people enjoy the agential privileges associated with free improvisation severally. More intricate configurations of agential authority are imaginable and certainly exist in other types of music. Free jazz inhabits the end of this spectrum opposite from bebop by granting full agency to all participating members, though often at the expense of cooperative musical forms. The who-element becomes complicated when every ensemble member retains the capacity to cue future musical events, effectively forcing a reconciliation of improvisation with composition.

Jam-band music, a genre devoted to this specific activity, features especially complex cueing systems, because the what-, when-, and who-elements all remain indeterminate. The performance practices of jam-band music feature the near-seamless transition from primarily composed to primarily improvised sections and back again. A performance on November 10, 2000 by the jam band the Disco Biscuits is representative: the band opens their first set with “Helicopters,” a song from their canon, and play though the first two verses. Then, the second verse yields to novel material that has never been played before and will never be played again. All four band members take harmonic and melodic liberties, creating the same kinds of musical

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collisions seen in Cream, the Jimi Hendrix Experience, and even free jazz. The band is jamming. These jams often narrate a negotiation within the band to project individual voices without infringing upon each other’s musical space. The next ten minutes explore and develop novel melodies and harmonic sequences, methodically building in both dynamic range and rhythmic density. Suddenly, the jam reaches a climax that yields all at once to the reprise of “Helicopters,” right where they left off, and the guitarist sings the final stanza.

This performance, which is typical of jam bands, has several features highlighting the challenges of group agency in collective improvisation. The first is the formal seam\textsuperscript{51} (as in “line,” “division,” or “joinery”) between the first half of the composition and the beginning of the jam. The ensemble abandons the material that it has repeatedly rehearsed and embraces new material, with no guarantee of what they will play nor how long they will play it. The second feature is the transition from the jam, in which all band members make autonomous decisions, back to a compositional context. The transition is remarkable because although no single musician is in charge, the ensemble seems to work cooperatively, concluding the improvisatory section and resuming the composition with what one might call magical precision.

This performance of “Helicopters” aptly highlights the fluid relationship between improvisation and composition, especially in comparison to the live performances that do not include a jam. These normative, stand-alone versions of songs crop up in performance only rarely. Stand-alone renditions are similar to the control variable in an experiment: the consistent, unchanging framework to the unpredictable, ever-changing constitution of the improvised

\textsuperscript{51} Formal “seams” are points in musical time in which one section ends and another begins. Its usage here comes with certain disclaimers. First, seams do not have duration; they are similar to bar lines. So, in examples like the Disco Biscuits’ “Helicopters” in which one section yields to another at a clear point, the “seam” is the (metaphorical) bar line between the end of the composition and the beginning of the jam. Second, where one section ends after another begins (thus creating an overlap), seams are conceptually impossible because seams cannot have duration. See the discussion of “Weather Report Suite” in Chapter 3 for an example.
performance. A stand-alone version of “Helicopters” consists of only two primary sections: a twelve-bar verse, and a thirteen-bar cadential gesture with a catchy four-bar hook:

**Example 1: The Disco Biscuits, “Helicopters,” stand-alone form.**

![Diagram of stand-alone form]

In this regard, it is remarkably economical. Excepting the cadential gesture (and other oddities), “Helicopters” is a straightforward repeating-verse form song. The cadential gesture ends on a definitive downbeat, and unambiguously ends the composition. But with the addition of a jam, the form has interesting alterations:

**Example 2: The Disco Biscuits, “Helicopters,” improvised form.**

![Diagram of improvised form]

In order to accommodate the transition out of the composition, the Biscuits duplicate the cadential gesture after the second verse, as if the song were over. The gesture, having its metric proportions still intact, conveys the band to a definitive downbeat. This time, though, the band elides that terminus with the first downbeat of the improvised jam.

At the onset of the jam, the individual ensemble members enjoy melodic, harmonic, and rhythmic liberties that enable expansive potential for novelty across multiple performances of the same song. Unsurprisingly, analysis of multiple “Helicopters” jams reveals only some common
musical parameters, before they spiral out into infinite uniqueness: they all start in the key A-minor, in 4/4 meter, at about 120 beats per minute. The first cadential gesture delivers the band to a downbeat with a consistent tempo, key, and meter, but no melodic or rhythmic obligations. The challenges of acting collectively become more pressing across the span of the jam, as the band approaches the seam between the improvisation and the resumption of “Helicopters.” The band members switch from mostly autonomous and improvisational to mostly cooperative and composed on a definite downbeat. So, the transition demands that individual band members share a precise intention of when to end the jam, yet denies them the usual communicative channels to discuss it verbally. Thus, jam bands like the Disco Biscuits embrace a mode of performance that is inherently challenging.

This performative magic is the province of cueing systems, which the Disco Biscuits likely learned from the Grateful Dead. Indeed, when briefly touring with Grateful Dead percussionists Mickey Hart and Bill Kreutzmann in the summer of 2014, the Biscuits recognized the similarities among their performance practices. Speaking with Rolling Stone, keyboardist Aron Magner said, “Though our music is quite different, the ethos is the same—both on the improvisational level as well as in the sense of community that our bands have created with our fans.”52 The Disco Biscuits rely on a musical language common among jam bands, already evident in a Grateful Dead performance from August 6, 1971.53 In the first set of that concert, the Dead played a jam not to connect two halves of the same song, but to connect the first half of

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one song, “The Other One,” to the first half of another, “Me and My Uncle” (see Example 3).\textsuperscript{54} Just as the Disco Biscuits would forty years later, the members of the band start the jam by exploring their own independent ideas, eventually losing a shared sense of pulse and key. Yet the Grateful Dead enhance the indeterminacy of future events to an even greater degree. Some instruments, such as rhythm guitar and keyboards, occasionally exit and reenter the performance, adding to the directionless feeling within the transition. Thus, the Dead’s mode of performance compounds the metric and harmonic indeterminacies that require resolution before a cueing system (let alone the upcoming composition) can begin.

As the band transitions from the metrically and tonally indeterminate jam into the beginning of “Me and My Uncle,” the individual parts indicate competing and often incompatible interpretations of the underlying meter. The onset of the excerpt features individual parts only loosely in dialogue with each other, if at all. The section has a floating quality, as the band seems to avoid any metric regularity or coordination of harmonies. Yet across the span of the two-minute excerpt, these interpretations become increasingly compatible, until the band has finally converged on a shared sense of meter and phrasing (see Figure 2).

\textsuperscript{54} Here I have transcribed the lead guitar and bass guitar in the last two minutes or so of the jam into “Me and My Uncle.” Certain aspects of this performance are problematic to transcribe. For example, even though a sense of meter does not emerge until m. 44, the entire transcription features solid or dashed bar lines. This notation is a matter of convenience, as bar lines enable the identification of measure numbers in the analysis. The bar lines are also retroactively compatible with what eventually becomes the downbeat of “My and My Uncle.”
Example 3: The Grateful Dead, “Me and My Uncle” excerpt, transcription
The first impression of periodicity to emerge from the murky opening comes from the bassist (Lesh), who attempts to give some structure to the improvisation by establishing and refining a simple motive (Example 4). By the sixth iteration, Lesh has stabilized the motive to a three-measure cell, emphasizing motion between C and B that, with the following descent to E, strongly implies flat-6–5–1 in E minor. Yet Lesh explores a series of motivic “prototypes” before settling on this unusual three-measure version. The first of these includes a lengthy ascent from D3 and spans six measures. The second and fourth explore other motivic lengths and metric placements, as if the bassist were still searching for a convincing “beat one.” Finally, the fifth iteration resolves this search by appending a quarter-beat rest at the end, situating the onset of every subsequent version on beat one.
Figure 2: “The Other One” into “Me and My Uncle,” sequence of major events

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<td>(1)</td>
<td>mm. 1-24 (ca. 6:00–6:21); unstructured, individual exploration; very weak sense of collective meter/key</td>
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<td>mm. 25-44 (ca. 6:21–6:45); increasing sense of periodicity in bass motive; implication of E minor via I-6–5–1 in bass motive</td>
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<td>mm. 45-55 (ca. 6:45–6:57); ensemble converges on a common downbeat; ensemble begins to negotiate common four-bar grouping</td>
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<td>(4)</td>
<td>mm. 56-72 (ca. 6:57–7:16); lead and rhythm guitars converge on four-bar grouping</td>
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<td>(5)</td>
<td>mm. 72-94 (ca. 7:16–7:40); full ensemble converges on four-bar grouping; ensembles confirms key and normalizes harmonic rhythm</td>
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<td>(6)</td>
<td>mm. 95-110 (ca. 7:40–0:05); ensemble cues beginning of “Me and My Uncle”</td>
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Example 4: “The Other One” into “Me and My Uncle,” progression of bass motive

a. First iteration (mm. 24–29)

b. Second iteration (mm. 30–32)

c. Fourth iteration (mm. 36–39)

d. Fifth iteration (mm. 39–42)
e. Sixth iteration (mm. 43–45)

By the end of the sixth iteration, Lesh has supplied several clear downbeats in a row, establishing a pattern that clarifies the location of “beat one.” Yet the regularity of the bass part does not confirm metric groupings beyond the level of the single measure on account of its unusual three-bar length. In fact, from measure 55 (what seems, at first, to be the tenth iteration of the bass motive) to measure 72 (where the bass finally aligns with the lead guitar and drums), the bass part implies a slew of contradictory metric implications (Example 5). First, at measure 56, when Lesh breaks the pattern set by the preceding bass motive, he obscures whether that measure is the second measure of another three-bar phrase or of a four-bar phrase, as would be more typical. Instead, a new phrase appears at measure 58, reasserting a hypermetric downbeat that seems to persist for two four-bar phrases. Yet Lesh breaks this pattern as well when he extends the third four-bar phrase through a fifth and sixth bar, at measures 70–71. Thus, in an interesting reversal, while Lesh is the first player to establish some periodicity to the murky opening, he is the last to join a shared sense of metric grouping.

The rhythm guitarist (Weir) demonstrates a more consistent awareness of the underlying metric framework in this excerpt. Weir often assumes a behind-the-scenes, organizational role within these types of transitions. Speaking to Alec Wilkinson of *The New Yorker*, Weir says:

If Jerry was developing a solo, I could intuit where he was headed, and as long as I played coy and like I didn’t really get what he was getting at, then, when he arrived at
that place, I could be there with a strong leading tone that would necessarily take where he was going somewhere else. Most often, it delighted him. Sometimes it enraged him.\(^{55}\)

From measures 41–56, while Lesh solidifies his bass motive, Weir establishes a two-bar motive of his own that helps to set both a metric and hypermetric downbeat (Example 6).

**Example 5: “The Other One” into “Me and My Uncle,” bass part, mm. 55–72**

Across measures 41–44, the rhythm guitar part features an oscillation between D and E that bears a slight resemblance to the eventual motive at measure 45. The motive returns at two-measure intervals, gradually accumulating a sense of periodicity. Finally, Weir crowns this newfound periodicity with a four-bar ascent from E to B—from tonic to dominant—marking measure 56 as the arrival of a four-bar grouping.

Example 6: “The Other One” into “Me and My Uncle,” mm. 40–57
Garcia corroborates that sense of metric grouping. First, he confirms the “beat one” supplied by Weir in measure 45 with an E-minor jab at measure 47. Then, he initiates a series of four-bar phrases on measure 56, based on the motivic fragment D–D-flat–C–B. This motive was a while in the making, as precursors to it appear in measures 13 and 38-39:

Example 7: “The Other One” into “Me and My Uncle,” prototypes of guitar motive

a. First appearance, m. 13
b. Second appearance, mm. 38-39

The regularity of these phrases must have held a persuasive power over the ensemble, because the band finally converges—and remains—on a shared sense of metric grouping starting at measure 72. From there on, the excerpt proceeds mostly in four-bar phrases.

The transition from individual and decentralized to collective and cooperative accompanies a shift from metric indeterminacy to metric certainty. As these events unroll, the onset of “Me and My Uncle” comes into greater and greater focus. As Garcia would later say, “there’s a lot of energy and a lot of something happening.” Yet a musical conversation observably precedes the transition from improvisation to composition. Garcia’s (and others’) insistence that the music has a life of its own is not ridiculous; it reflects the multi-dimensional network of interactions that mediates individual intentions and collective actions. Demystifying group agency reorients our sense of wonder, not on musical magic, but on musical minds.

Conclusion

This dissertation tests the idea that design implies intention. In Chapter Two, I evaluate the patterns of design at the level of local musical phenomena, such as the transitions between jams and compositions, and propose a generalized framework for cueing systems in collective improvisation. Collective improvisation belongs to a class of situations called “coordination problems,” in which musicians attempt to act according to how they think other musicians will
act. I argue that almost all ensembles rely on a basic two-step pattern consisting of an enhanced hypermetric event that indicates when something will happen, and a salient musical event, usually harmonic, that indicates what will happen. I then provide examples of this system in genres ranging from jam bands to jazz and funk ensembles.

Chapter Three continues the search for design at the broader level of the whole improvisatory section. This chapter answers the question, what are the organizational principles that govern the forms of improvisation? By revisiting the concepts of continuity and cohesiveness, I show that most examples fall between two extreme forms in collective improvisation: the “continuous development model” and the “episodic” model. Then, I analyze these forms in action using lengthy transcriptions of live performances by the Grateful Dead and the Disco Biscuits, two jam bands with very different approaches to improvisation.

In Chapter Four, I apply the search for design to the abstract concept of musical ontology. Collective improvisers (and jam bands in particular) often exploit the anonymity of improvisatory sections to breach the otherwise-inviolable bounds of compositions, such as beginnings and endings. In this chapter, I argue that the presence of shared intentionality is a minimum requirement for the ontological status of the improvised work, at least in the unusual case of collective improvisation.

Throughout this work, transcription and analysis of live performance reveals unmistakable patterns across genres and ensembles, suggestive of design. Yet artist interviews consistently and vehemently reject this conclusion. There is a profound discrepancy between the results of score analysis and of ethnography. For a genre ripe with contradictions, the precarious balance between analysis and testimony may be entirely appropriate.
II

CUEING SYSTEMS
IN IMPROVISATORY POPULAR MUSIC

Introduction

Collective improvisation problematizes what should be a fairly simple question: how do people do things together? John Medeski, keyboardist for the jazz trio Medeski, Martin & Wood, has his own answer:

JOHN MEDESKI: It starts with very clear hand signals that you say, “this means this” or “when I do this, it means that” to eventually being able to know what someone is thinking because you know them and you know their music and you know where they’re going. That comes with time and it also comes with chemistry. I think you can have that chemistry with someone right away and then if you stay together with them for twenty-five years, it really becomes something else. There’s a lot of elements at work.

CHRISTOPHER GUPTA: But the hand signals started out as the scaffolding for trying to recognize and understand each other’s patterns and signals?

JM: Yeah! But also, just realizing that because you can’t read minds, I use these standard hand signals. Like, if I’m going to change key, I will use hand signals. Sharps, being upward, mean that ‘one up’ is the key of G; three fingers down is the key of E-flat.
CG: What if people aren’t looking at you?

JM: That’s the other thing. You have to constantly check in with each other. Eye contact is very key to improvised music—looking at the people you’re playing with and checking in. Otherwise you hope that people just hear you go somewhere. But if you all want to go somewhere on a dime, like if I want to move to a certain key, it’s just easier if I give Chris [Wood] a cue—boom. The other thing we do is record ourselves and listen to it. We will either play freely—and that means either out of time or in groove, but be playing freely—and then go back and listen to it and be like, “Oh wow, that was really cool, did you hear that? Where were you hearing the one? Where were you hearing the one?” Work that out, talk about it, figure it out, and then we’ll play it again, and on cue, we’ll just change in order to create a B section, or bridge, or a second part, without talking about what to do, and just see what happens. And by doing that over and over and over and over, you get a sense of what people might do.\(^56\)

Medeski offers two strategies for acting collectively: to spend twenty-five years learning to know what another person is thinking, and in the meantime, to use visual cues, like hand signals, citing the importance of eye contact in improvised music. The inevitable goal of just ‘knowing what someone is thinking’ evokes the mysticism that other musicians, such as Jerry Garcia, seem to identify in collective improvisation.\(^57\) Yet Medeski also emphasizes the importance of visual signals and the potential to solve the riddle of collective improvisation through traditional modes

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\(^{56}\) John Medeski, interview by Christopher Gupta, June 28, 2016.

\(^{57}\) See: Chapter 1, “Demystifying Group Agency.”
of communication. Cues—signals used to hint, suggest, guide, or trigger—seem to be visual phenomena.

The audio recordings of Medeski, Martin & Wood’s live performances paint a different picture. Immediately preceding those moments of turning “on a dime” are certain auditory events that surface across different performances (and, it turns out, even across different ensembles). Perhaps these events are merely the residue of a visual cueing system. But they are consistent, and they are widespread.

This chapter provides an account of cueing systems: sequences of deliberate musical events involving two or more people that initiate a collective action. First, I establish a generalized framework of cueing systems consisting of two events: an extended metric upbeat and a salient musical cue or signal. This section includes a discussion of these components and other theoretical concepts. Next, using transcriptions and analysis of live performances, I explore common variants of this model: the “motivic” cueing system and compatible conditions. Finally, I provide an example of the cueing system as a safety net for live performance. These examples confirm that, while they may vary in their specific deployment, cueing systems maintain a common two-step framework, even in fringe contexts.

*The Basic Components of Cueing Systems*

Consistent metric pulse is a bedrock requirement of virtually all cueing systems. Pulse keeps a common tempo, but more importantly it sets the rate of change of practically every other internal musical parameter, from harmonic rhythm to phrase length. Cueing systems are managers of change, and so their relationship to pulse is very close. However, pulse can be a
tricky concept in improvisatory music, well known for its enhanced “participatory discrepancies” and subtly nuanced collective beat. A wide variety of improvisational styles and genres identify the importance for improvisatory ensembles to coordinate individual musicians’ slightly asynchronous metric pulses in the pursuit of musical groove, the “negotiation of a shared sense of the beat.” What enables this communal aspect of groove is the regularity of the individual parts. Even if the individual parts imply different or conflicting pulses, continuous rates of change among those parts anchor the ensemble to a shared and predictable pulse.

A shared pulse is among the most fundamental musical parameters of cueing systems because it enables virtually every metric unit, including the hypermeasure. Hypermeter, a term coined by Edward T. Cone in *Musical Form and Musical Performance* and adopted by many music theorists since, is a metric unit greater than the measure (usually of four-, eight-, or sixteen-bar length) that maintains the internal qualities of the measure, such as the alternation of strong and weak beats. Cueing systems, whose job it is to manage novelty and change, rely on predictability in order to create jarring metric contrasts and dissonances capable of signaling something new. Hypermetric regularity, undergirded by consistency at the level of the beat, is the backdrop of predictability against which cueing systems can signal change.


59 Berliner, *Thinking in Jazz*, 349.

Moreover, examples of improvisatory music that lack a shared pulse (or any pulse at all) simply cannot support musical cueing systems. Instead, this music obviates the need for cueing systems by relying on predetermined structures, like ‘tension and release’ frameworks and extra-musical codes, like hand gestures. For example, the jazz ensemble Joseph Holbrooke, active in the mid-1960s, employed a variety of these predetermined structures in their quest to break down musical conventions such as meter and mode. According to Derek Bailey, a member of that ensemble:

One of the first [attacks on the harmonic framework] was to break the metre down.
Having reached the point where the aural effect we were achieving was one of playing out of tune it began to seem almost perverse not to actually play out of time. A soloist would now stay on each chord for as long as he wished to improvise on it, making the changes to the next chord how and when he wished, taking his accompanists with him.

Implicit in Bailey’s description of the musical processes adopted by Joseph Holbrooke at this time (around 1965) is a hierarchical division between soloist and accompanist. This division is antithetical to the notion of collective action because it forecloses the capacity of the ensemble to form and act upon a shared intention. Just as the soloist ‘takes his accompanists with him,’ the accompanists enjoy hardly any role whatsoever in the decision to move from one chord to another, nor how to do it. The performative instructions (to play a chord as long as the soloist wishes before transitioning with the accompanists to the next chord) compensate for the absence

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61 Jam band Umphrey’s McGee, for example, is well known for their reliance on hand signals within improvisatory sections. These include gestures to signal key changes, chord progressions, tempo changes, and even rhythmic motives. The band discussed them in between sets at the February 11, 2011 show in Denver, CO. A video recording is available here: [http://www.youtube.com/watch?v=P2R6_o9RPMU&feature=player_embedded](http://www.youtube.com/watch?v=P2R6_o9RPMU&feature=player_embedded).
of certain musical parameters, such as meter, which are typically necessary for improvisatory ensembles to cohere as a group agent.

Miles Davis’ “Flamenco Sketches” from the landmark album *Kind of Blue* (1959), which has been cited as an early step connecting standard-practice jazz with free jazz, also features certain performative instructions.\(^6^3\) Free jazz, which usually strives to operate without the use of formulas such as cueing systems, frequently relies on performative guidelines or similar frameworks, like those adopted by Joseph Holbrooke. In “Flamenco Sketches,” ensemble members still take turns soloing, but solos are largely modal and the length of each solo is left indeterminate. On its face, the song does seem to approach the freedom of free jazz. A predetermined framework is active even in this early example. As pianist Bill Evans explained in the album liner notes, “Miles Davis presents here frameworks which are exquisite in their simplicity and yet contain all that is necessary to stimulate performance with a sure reference to the primary conception.”\(^6^4\) Evans’ choice of diction is remarkable. By describing the frameworks as ‘all that is necessary,’ he establishes the value of economy. The frameworks meet their task (to provide a ‘sure referent’) and do not overshoot this mandate. Yet “necessary” further implies that collective improvisation requires some kind of structure of organizing principles that still allows a measure of personal freedom.

Evans continues: “‘Flamenco Sketches’ is a series of five scales, each to be played as long as the soloist wishes until he has completed the series.” While the length of each part of the series is left indeterminate, the framework curbs the collectivity of the resulting performance by maintaining the familiar performative hierarchy from bebop; length is a decision to be made at

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the discretion of the soloist and to be obeyed by the accompanying instrumentalists. “Flamenco Sketches” thus highlights an important distinction between cueing systems and rule-based frameworks, as also found in Joseph Holbrooke. In the 1959 recording (and the alternate take released in 1997), accompanists react very quickly to and even sometimes anticipate soloists’ decisions to switch from one mode to the next or end their solo altogether, but do not have any say whatsoever in that decision. If the result appears coordinated, it is because the instructions attached to the performance simplify the action-reaction process: accompanists know which member is the soloist, which mode the soloist will move to, and which member is the next soloist. Accompanists need only carefully listen to coordinate.

Cueing systems, on the other hand, are more common within performance practices that are not so simple as to allow ensemble members to listen, anticipate, and react appropriately. Pulse becomes a necessary musical parameter when there are multiple players making decisions together and with few or no instructional guidelines in place to structure the performance. One reason for this is practical. Pulses group into meter, and meter has the power to signify primary temporal points (hypermeteric downbeats) likely to feature changes beyond the realm of meter. The very long history in Western music of organizing thematic groups into even-numbered hypermeters and of coinciding significant musical events with strong downbeats (not to mention the continuation of this practice in nearly all improvisatory music that relies on cueing systems) has surely entrained musicians to anticipate musical events at those junctures.

Similarly, the metric component of cueing systems signifies a call for collective action by heightening the rhetorical significance of a hypermetric pulse beyond its typical magnitude.

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65 Hodson has referred to this decision as a negotiation between the players in the course of performance (Hodson, *Interaction, Improvisation, and Interplay*, 144-45). This description is misleading: because the players do not enjoy equal decision-making capabilities, but instead preserve the soloist-plus-accompaniment distribution of power found in bebop, the process is not a negotiation in any collective sense. When a soloist moves from one mode to another, any accompanist left playing the previous mode is then playing *wrong notes* and not simply different ones.
These extended upbeats achieve this status by grouping the usual alternation of strong and weak measures within strong and weak hypermeasures. For example, a common strategy of establishing a hypermetric upbeat (that is, an upbeat gesture that spans at least a single measure) is the sudden appearance of a multi-measure fill in the drum or rhythm section, especially after a long series of four-bar phrases. This has the effect of grouping single measures within an extended hypermetric upbeat (a “hyperupbeat”), thereby building anticipation for the downbeat (or “hyperdownbeat”) of the following grouping.66

The metric component of cueing systems thus highlights the downbeat of the following grouping as the temporal location of an upcoming musical event. Yet this expectation does nothing to indicate what that event might be. Group agency in collective improvisation belongs to a class of situations called coordination problems,67 in which multiple agents choose their actions from a set of options, and produce the optimal outcome based on each other’s expected actions. David Lewis, who first articulated the concept of the coordination problem in 1969, captured the idea within a familiar hypothetical situation: a suddenly dropped phone call between two people. Each person has to choose whether to call the other back or wait to be called back, but if both people choose the same option, the call will never resume. Each person’s decision relies on his or her expectation of how the other person will act. Nothing in the scenario instructs how to make this decision, and yet interestingly, people regularly outperform mere chance. Some

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theorists argue that the reason for this is that there is a common human impulse to search for a solution, and to choose the most “salient” option.\(^68\)

Salient options, or what have been articulated as ‘focal points’ in philosophical studies on social conventions, are the other basic component of the cueing system.\(^69\) Focal points are solutions upon which multiple independent agents form simultaneous expectations. The concept of salience is not without some caveats however. First, it is entirely based on context. In the case of the phone call, the expectation that the original caller will call back is a salient (and perhaps the most salient) option. Yet it is salient only necessarily in the context of the dropped call between two acquaintances. In contrast, telemarketers rarely call back after someone hangs up on them. Similarly, what is salient for an electronica band is very likely to differ from what is salient for a bluegrass band. The significance of this caveat is that salience is far too particularized to enumerate all its different forms. The identification of salience relies on a deep fluency in the context. Second, salience is agnostic to reason. Expectations are not saliently good or saliently bad; they are simply salient in context.\(^70\) This is not to say that salience is arbitrary, but that it fosters convention by repetition, not by logic.

Moreover, collective improvisation is not a pure coordination problem. In those examples, participants are absolutely unable to communicate with each other prior to the formation of their plans. In the hypothetical case of the dropped phone call, the whole purpose of

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\(^69\) The notion of focal points in decision-making was introduced in Schelling, *Strategy of Conflict*, 57-8. See also Rachel Giora, *On Our Mind: Salience, Context, and Figurative Language* (Oxford University Press, 2003), 13-38. Canonne, “Focal Points in Collective Free Improvisation” is a recent application of the concept to collective free improvisation.

\(^70\) See generally: Lewis, *Convention*, Chapter 1.
the exercise is to restore communication. On the other hand, the context of musical performance allows alternative modes of communication typically foreclosed by pure coordination problems. For example, musical motives can have precise semantic meanings. Melodic and harmonic tropes, such as cadential dominants and three-fold repetition can be suggestive of formal events. The availability of modes of communication, even within performance practices that absolutely would not tolerate verbal exchanges, is an important distinction between collective improvisation and pure coordination problems. The immeasurable range of individual options is another. Unlike the dropped phone call, in which participants have only two courses of action available to them, improvisers and musicians in general have universes of potential actions to choose from. While collective improvisation may benefit from quasi-available modes of communication, it contends with a far more extensive set of options.

Thus, the component of salience in cueing systems comes in two forms: the event is salient based on difference or otherness with the surrounding musical texture; or the event is salient based on its engagement with familiar, culturally ingrained musical signals. Modulation, for example, is among the most common transitions in collective improvisation. The decision to change keys triggers several salient features: the prominent use of non-chord tones (usually, the leading tone of the new key) and a heavily established signal, the applied dominant. In this case, the accidentals are salient based on surroundings, and the dominant is an ingrained signal. Thus, the task of the basic cueing system is to coordinate the emergence of a salient event like this one with an extended hypermetric upbeat.

This formulation of the basic cueing system already seems to entail an element of collective action. After all, no single ensemble member is capable of fulfilling both the metric

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71 Fluency in these signals may be what artists refer to when they describe the empirical knowledge that comes only from playing together for x many years.
and salience-based components of the cueing system; it is at least a two-person job. The relationship between these two actors is not straightforward. The actions of one person rely on the cooperation of another person, which that person may decide to provide or refuse. To that extent, the cumulative action involves a period of negotiation that situates the exchange somewhere between individual and collective agency. The relationship is in a state of flux, as the participating musicians develop and act upon a shared intention. Collectivity comes in degrees, and the basic cueing system features an accelerated transition from a low degree of collectivity, in which ensemble members share compatible intentions, to a more robust one, in which ensemble members share the same intention.

This framework of the basic cueing system emphasizes the gradual transition from independent and individual to cooperative and collective. The combination of an extended metric event with a salient musical event contains most of the information required to execute a cue, but the early coordinative steps remain unclear. One threat to the logic of this system is the ambiguous hierarchical relationship between the two components. The signaling power of each component relies on coordination with the other component. Yet in order to coordinate the two aspects, one aspect needs to arrive first. There seems to be no obvious rational basis to ordering these events, except arbitrarily. The framework is missing a step.

Another intermediary step usually precedes the completion of the transition from individual to collective modes of playing. This step, the preparation for the cue, closely resembles the act-react model found in Joseph Holbrooke and “Flamenco Sketches”: a flexible moment-to-moment approach in which the elapsed time required for one agent to receive, process, and react to the actions of another agent does not disrupt the musical flow. It is a stepping-stone between the mostly autonomous mode of collective improvisation and the quasi-
collective transition that takes place during a cueing system. In other words, before a cueing system can take place, the relevant participants (probably a member of the rhythm section and a “lead” or “front-man” instrumentalist) need to be properly situated. This is the task of the preparation for the cue.

Interestingly, improvising musicians are very aware of the component of cueing systems that prepares for the cue. According to Medeski: “we don’t repeat what the person did, but we listen so closely that we know where they ended up…. When you really listen, like so you’re almost hearing it and being it as it’s happening, you are almost predicting what’s happening.” The prep for the cue—the earliest component—remains on musicians’ radar, even if the later stages do not.

The preparation manifests in many ways, but most of these have at least one thing in common: the destabilization of the collective ensemble as one person assumes a disproportionately broad influence over the musical output. More often than not, this entails a single ensemble member emerging from the collective group as a soloist. That is, a person assumes control over the melodic domain. Of course, one person can dominate the collective output in other ways as well. If not by emerging as a soloist, then the person usually assumes dominance over the ensemble by unilaterally resolving a musical indeterminacy, such as the location of the downbeat (as in the Grateful Dead excerpt from Chapter 1, Example 3) or the identity of the reigning key or mode. Individual decision-making is diametrically opposed to collective action. Thus, the unilateral act of resolving a musical indeterminacy downshifts the collectivity of the ensemble, and situates at least one person to play an active, primary role in the subsequent cueing system.

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72 John Medeski, interview by Christopher Gupta, June 28, 2016.
In a sense, this preparation for the cue is where the performative magic of collective action in improvisation is hidden. By the time the two components of the basic cueing system are underway, the ensemble has already shifted away from the democratic, equal mode of participation to a hierarchical one. The excitement of an extended upbeat and rhetorical drama of the cueing system distract from the sleight-of-hand that has already taken place, in which one musician emerged as soloist or otherwise exerted some increment of control over the ensemble. The musical output immediately following the cue—for example, a key change or formal division—is the most prominent aspect of this transition from the listener’s perspective. But in terms of intra-ensemble dynamics, the most drastic shift happens at a relatively unremarkable moment, at the preparation for the cueing system.

The basic cueing system highlights the difference between two kinds of collective action: the robust, cooperative actions in which a remarkable musical transition occurs, and more modest, smaller-scale examples that take place sporadically throughout the improvisation. This latter variety is far less visible because the exchanges taking place among ensemble members are less striking. Modulations and formal divisions require the sophistication of cueing systems and preparations for the cueing system because they impose more rigorous demands on the ensemble as a group agent. Collective actions that are within the capacity of an improvising group agent, such as motivic development and tempo changes, do not threaten to derail the improvisation if the ensemble should fail to act together. Like the act-react model of “Flamenco Sketches,” these collective actions are simple enough to allow musicians ample time to react to each other and still appear coordinated.
Besides being novel and prominent within a particular musical context, the component of cueing systems based on salience has the interesting quality of informing ensemble members of how they should act if they wish to cooperate. Of course, the instructive content of a musical event is coded, and varies in terms of specificity. This is another measure of salience. At one end of the spectrum are heavily conventionalized gestures, such as cadential motives and applied dominants, the discursive content of which relies on a participant’s fluency with musical idioms. These are “motivic cues:” melodic fragments, crafted and designed ahead of time, that have specific meanings. Bandleader Steve Coleman, for example, has discussed constructing rhythm and melodic figures for his band members, each with specific formal instructions attached.73 These extreme cases are reminiscent of the “rules” that govern quasi-collective performances, like “Flamenco Sketches.” The challenging examples, from an analytical perspective, reside at the other end of the spectrum, in which the meanings attached to musical events are not so specific as to restrict an individual’s capacity to make decisions.

Still, some examples of motive-based cueing systems manage to preserve a measure of ambiguity by dispersing the authority to trigger a motivic cue across the entire ensemble. Steve Coleman is a counterexample to this; in most of his recorded performances, he alone seems empowered to use motivic cues. The jam band Lotus, on the other hand, grants that authority to multiple individuals. The April 12, 2008 performance of “Wax” provides an example of this practice.74 The recording proceeds as follows:

The band plays through all but the last instrumental verse of “Wax” before entering a jam. The precise moment “Wax” yields to the beginning of the improvisatory section is a little fuzzy however. At first, the bassist and keyboardist continue to vamp on the bass line, harmonies, and harmonic rhythm of the composition. The guitarist, seemingly taking a moment to plan, does not introduce new melodies until 4:33, at which point the jam starts in earnest.

Throughout the short jam, individual players demonstrate their readiness for the upcoming composition by playing and repeating specific motivic cues that draw on melodic fragments from “Around the World.” Comparing these cues to the thematic material in “Around the World” reveals their design (see Examples 2 and 3). Both motives clearly reference the fourth measure of their main themes. Moreover, motivic cues are almost always in the same key as their compositional prototypes. Thus, when a band member of Lotus loops his motive, he signals that he is playing in the correct key and ready to begin the next song.

**Example 2: Lotus’s motivic cues for “Around the World”**

a. Lead guitar

![Lead guitar example image]
b. Bass guitar

Example 3: Daft Punk, “Around the World” primary themes

“Wax,” however, is not in the same key as “Around the “World.” As a result, the transition has to include a key change in addition to the individual adjustments that take place until each part resembles its upcoming motivic cues. The modulation occurs early—around 6:33 of “Wax.” Leading up to this point, the keyboardist had been playing the following theme:

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75 A secondary bass line is provided in an ossia staff.
Example 4: Lotus, “Wax” to “Around the World,” keyboard theme

At 6:33, he breaks this pattern, indefinitely holding over the E from the last measure, destabilizing the previous tonic G and initiating a shift to E minor.

With the key change out of the way, a cascade of smaller transformations occur. First, the guitarist begins to tweak his ostinato until it resembles the motivic cue:

Example 5: Lotus, “Wax” to “Around the World,” guitar melodies

a. ca. 6:33–7:05

b. 7:05–7:10

c. 7:10–7:20

d. 7:20–7:36
The first melody, immediately following the key change in the keyboard part, helps to solidify the new tonal center by emphasizing 5–7–1: a common cadential gesture in popular music. Subsequent melodies retain one or more notes from the previous until, like a game of “word golf,” the part matches the required motivic cue (Example 5d). Around the same time (7:05–7:36), rather than tweak a few notes at a time, the bassist simply starts playing his motivic cue. Then, the band moderates the tempo down to the target speed, and with all these elements in place, begins “Around the World” several seconds later.

Motivic cues seem to be attached to particular compositions. For example, when Lotus played “Around the World” nearly a year earlier on April 14, 2007, they transitioned into it by using the same motives.76

**Example 6: Lotus, “Greet the Mind” into “Around the World,” performance timeline**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td>“Greet the Mind”</td>
</tr>
<tr>
<td>2:08</td>
<td>Jam</td>
</tr>
<tr>
<td>5:04</td>
<td>Motivic cues</td>
</tr>
<tr>
<td>0:00</td>
<td>“Around the World”</td>
</tr>
</tbody>
</table>

The process is nearly identical: the bassist adopts a slight variant of the same one-bar motive starting at 4:49, and, the keyboardist follows suit at 5:08. In this respect, motivic cues are cousins of the melodic and rhythmic figures found in bands like Steve Coleman and the Five Elements, in that they bear specific instructional content. In the case of the jam band Lotus, those instructions are to prepare to play “Around the World.”

By drawing on composed riffs and licks, motivic cues can blur the boundary between cueing material and introductory sections. The October 31, 1998 performance of “Manteca” into...

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“Tweezer” by the jam band Phish provides one such example. The usual stopping points within the transition out of “Manteca,” an Afro-Cuban tune co-written by Dizzy Gillespie, are difficult to pinpoint because the song flows into a vamp and the vamp flows into a jam:

Example 7: Phish, “Manteca” into “Tweezer,” approximate performance timeline

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0:00 -- 1:20  "Manteca"  1:20 -- 3:03  Vamp  3:03 -- 3:26  Jam  0:00 -- 0:22  Motivic cue  0:22 --  "Tweezer"
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In contrast, the arrival of the motivic cue is unmistakable. At the top of track 4, the signature riff for “Tweezer” appears in the guitar part (Example 8). Yet the rest of the band, likely just settling in for a long jam, continues to improvise autonomously (Example 9).

Example 8: Phish, “Tweezer,” motivic cue and introductory guitar riff

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Example 9: Phish, “Manteca” into “Tweezer,” cueing schematic

Typically, when Phish performs “Tweezer” without a jam as a lead in, the introductory riff is unaccompanied by the rest of the band. With the lead in, the jam itself becomes accompaniment to the riff as the band poises to commence the composition. The drummer provides an extended fill across the last eight measures of the cue, and the band begins “Tweezer” on the next downbeat.

The motivic cue used occasionally by the Grateful Dead to segue into “Dark Star” is another example that blurs the boundary between cue and composition. The introduction to “Dark Star” consists of a short four-note motive in the lead guitar part, which is then doubled and elaborated on by the bassist.\(^\text{78}\)

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Example 10: The Grateful Dead, “Dark Star,” introduction

Yet in live performances of “Dark Star” that transition out of another song, the introduction sometimes becomes distorted: ⁷⁹

Example 11: The Grateful Dead, 10/31/91, “Dark Star,” introduction, ca. 7:02–0:10

Similarly, on February 27, 1969: ⁸⁰

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Example 12: The Grateful Dead, 02/27/69, “Dark Star,” introduction, ca. 0:00–0:07

What accounts for this variance is an apparent overlap between the B–A–B–D motive as a cue and the B–A–B–D motive as part of the introduction. When the band transitions into “Dark Star” out of another composition, they seem to attach additional instructions to the motive as a cue: the guitarist should play it at least twice, and the bassist should double it at least the last time. Thus, in Example 11, the band does not fulfill the instructions and continues on to the end of the introduction until the bassist doubles the motive with the guitarist at the end of the third measure. Likewise, in Example 12, a miscommunication between bassist and guitarist leads the guitarist to play the lead-in to the song a full measure earlier than the bassist. Interestingly, Phish and the Grateful Dead differ from Lotus in their treatment of motivic cues. Lotus assigns motivic cues to specific compositions and never fails to use them. Phish and the Dead seem to regard motivic cues as one option among many.

Variants: Compatible Conditions

Motivic cues work because they require a low level of coordination to deploy, while making possible a high level of coordination afterwards. When Jesse Miller of Lotus decides to deliver his bass cue for “Around the World,” he does not need to coordinate that decision with
anyone else. He can simply start, as he did in the performance on April 12, 2008. Yet by starting, he prompts other players to coordinate their decisions with *his*. Other players can plan their parts accordingly, because they know that he will play the same motive until the beginning of the next composition.

Motivic cues belong to a larger category that I call “compatible conditions:” a series of methodical adjustments that discharge jarring, drastic transitions by distributing them over longer spans of time. Like motivic cues, compatible conditions involve holding patterns that are both backwards- and forwards-compatible. They flow seamlessly from the preceding improvisatory section, but also prepare the ensemble for forthcoming collective transitions. Unlike motivic cues, compatible conditions can involve non-motivic musical parameters, such as rhythmic figures and accompanying textures. Thus, compatible conditions can ease virtually any kind of musical transition.

In the absence of motivic cues, compatible conditions tend to emphasize ostinato patterns that release cueing musicians to deploy salient events within a certain threshold. Jam band Phish used precisely this strategy on November 27, 1998 to transition from “Chalkdust Torture” into a cover of “Mirror in the Bathroom,” by the English Beat.81


A series of shifts unfolds across this short excerpt, yielding one set of compatible conditions to the next (Example 14).

**Example 14: Phish, “Chalkdust Torture” into “Mirror in the Bathroom,” cueing schematic**

Each shift is the result of an autonomous decision, and brings the collective ensemble one step closer to “Mirror in the Bathroom.” First, at 3:25, the bassist abruptly starts looping the opening bassline of the upcoming composition. At 0:12 of the next track, the guitarist works his part into the ska style of “Mirror.” Thus, with these holding patterns in place, the only remaining variable left in this cueing system is how long to hold each ostinato before starting the lyrics. Yet it hardly matters because the decision to begin singing is left to only one person: the lead guitarist. It is not a collective action, because the obstacles in the way of negotiating an improvised transition have already been handled through the intermediary steps.

Not all examples of compatible conditions rely on motivic ostinatos; others rely
on the congruity of harmony (or modality) and tempo. On April 12, 2008, after using a motivic
cue to transition from “Wax” into “Around the World,” Lotus used compatible conditions to
transition back from “Around the World” into “Wax:”


This time, there is no motivic similarity between the individual parts at the end of the
improvisation and the beginning of the upcoming composition. Instead, the transition consists of
a series of smaller steps, each attaining near-compatibility with the next (Example 16).

First, at 4:24 the guitarist interjects an off-key motive, effectively assuming the role of
soloist while initiating a modulation to G Dorian. Soon after, the keyboardist introduces a vamp
on i–IV in the new key. The progression functions easily as a compatible condition, because it
signals to the rest of the band that the keyboardist is looking ahead to the next composition
without requiring their coordination. It is perfectly at home within the modal framework of the
jam, and readies the band for the next step: an elaborate guitar solo in the parallel major, starting
around 6:55. As with the previous examples, the guitarist can solo as long as he likes, and
reliably expect the keyboardist to continue looping the progression.

82 A recording is available at: Lotus, *Live at The Fox Theater on 2008-04-12*, Internet Archive,
However, there does seem to be a principle behind how long the guitarist will wait. The keyboardist organizes the progression into eight-bar groupings, a pattern that the rhythm section supports with a striking upbeat pulse every eighth bar. The guitarist enters the ensemble at the end of an eight-bar phrase—almost always. An interesting exception occurred approximately seven months later, on November 29, 2008. On that night, the band skipped the i–IV chord progression, proceeding directly from the jam into the major mode guitar solo. The flexible nature of compatible conditions makes this kind of real-time adjustment possible. In lieu of the intermediary section, the band decided to spontaneously capitalize on an exciting rhythmic buildup between the keyboardist and drummer (track 12, [10:26–10:49]). The guitarist, surely watching and listening to his bandmates closely, anticipated the switch to the major mode, and began the solo that would bring the improvisation to an end.

On April 12, 2008, in contrast, the transition was less spontaneous. At the end of the third time through the eight-bar vamp on i–IV, the guitarist teases the major third, signaling the move

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to the parallel major. Again, the band seems to count in eight-bar phrases, as the rhythm section provides an accentuated fill every eighth bar. After a total of four iterations summing to thirty-two bars, a default multiplier and metric length in jam band music, the guitarist brings his solo to a close along with an extended fill in the drums.

The flexibility of the approach is responsible for creating an impressive degree of variance among different performances of “Wax.” The first section, based on the minor-mode chord progression in the keyboard part, is usually sixteen bars long, though lengths of other multiples of eight also exist. The section featuring the major mode guitar solo also varies, ranging from two to four eight-bar phrases and occasionally breaking the eight-bar phrase. On October 31, 2008, for example, the guitarist played a twenty-bar solo, or five four-bar phrases. These are the kinds of ad-hoc decisions made possible with cueing systems based only on compatible conditions. The whims of the musicians rise to the metrical surface, because they are less reliant on the signaling power of extended hypermetric upbeats to trigger transitions. Moreover, there seems to be no observable relationship between the length of the section based on the minor-mode chord progression and the length of the guitar solo. Lotus regards each section on its own, without concern for the larger metric groupings found in other examples.

Ad-hoc adjustments to the sequence of parts and their metrical qualities bolster the unpredictability of the cueing system, from both the perspectives of the musicians and that of the audience. Compatible conditions enhance the feeling of spontaneity. The reliance on a series of compatible or near-compatible conditions naturally fosters a sense of continuity from section to section, evincing the elements of design usually reserved for composed transitions. Each of the above examples belongs to a genre with a set of expectations attached, dictating the span of the rates of change idiomatic to the style and within which listeners and performers identify some
kind of musical continuity. Thus, when Garcia loops the opening motive to “Dark Star” or Jesse Miller to “Around the World,” they do so within a range of time set by a threshold for change. For the Grateful Dead, this threshold is very short; Garcia rarely repeats the motive more than twice. For Miller, this threshold can be very long, spanning minutes. Unsurprisingly, genres with a low tolerance for repetition have more clearly instructive motives, while genres that have a high tolerance for or even celebrate repetition, such as electronic dance music and funk, are more amenable to the comparatively less instructive cueing system of compatible conditions.

Some ensembles rely on repetition to promote temporarily a short melody to the status of a motivic cue. These cases usually feature a quasi-hierarchical division between soloist and accompanists, such that most of the melodic focus is on an individual, rather than the group. Within this context, four- or eight-fold repetition of a short melody acquires the signaling potential of a motivic cue, especially when supported with an extended fill in the rhythm section. In other words, the soloist creates a strong expectation for change by prolonging a period of stasis. Jazz/funk band Garaj Mahal used this device in a performance of “BIG Funk Jam” from June 15, 2002:84

Example 17: Garaj Mahal, “BIG Funk Jam,” performance timeline

![Timeline](https://example.com/timeline.png)

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At approximately 10:01, the keyboardist emerges as soloist, shifting the ensemble from a more democratic format to a more hierarchical one. At 12:59, the keyboardist starts looping variations on the following motive:

Example 18: Garaj Mahal, “BIG Funk Jam,” keyboard riff prototype.

Alone, it is unremarkable. But with several repetitions, the ensemble recognizes its signaling potential. The drummer, likely anticipating that the keyboardist would continue for a default metric length, a total of thirty-two bars, supplies a two-measure drum fill to reinforce the imminent structural seam between jam and composition, the latter of which the band resumes at 13:37. Repetition, always a threshold question, eventually becomes a marked musical event.

Variants: The Safety Net

Occasional miscommunications may be inevitable. Here too cueing systems have a role in their ability to quickly communicate individual intentions across the ensemble, and thus help the group recover from error. However, in order to support the notion of a musical error, we require principles that explain how to attach value to certain musical events and parameters above others (and thus to distinguish musically good from musically bad). For example, a wrong note in the performance of a piano sonata is the failure to perform composed texts as written—a violation of the principle that performances should adhere to composed texts. Improvised music
presents an obvious problem for this principle in that it undermines the distinction between text and non-text, and with it, the basic dichotomy of rightness and wrongness. Instead, improvisers often frame the idea of musical error or mistake as a result of a confrontation between intentionality and spontaneity.  

Especially in the context of bebop and turn-based jazz, in which accompanists have a kind of text to follow, errors are construed as accidents (i.e. unintentional) that are either tasteless and/or uncooperative, thereby jeopardizing the ability of the ensemble to perform together.

Spontaneity largely enables discovery in improvisation. It provides musicians with an avenue to accidental novelty at the risk of accidental error. Intentionality can interfere with discovery, but also mitigate the risk of failed experiments. Collective improvisation shares these values with turn-based genres, but introduces the problematizing variable of a collective framework: ensemble members need to communicate their intentions, so as to coordinate and act upon them. The conflict here is between two different levels of intentionality (or subplans) and spontaneity or novelty.

Miscommunications in collective improvisation are the cases in which the spontaneous experiments of individuals breach both levels of intentionality, effectively compromising the ability of the individual (and perhaps the entire ensemble) to share basic intentions. This is different from those cases in which one musician introduces a salient musical event and another musician decides to ignore it, intending instead to prolong the resulting conflict. Rather, these are the moments in which the divergence of individual intentions is unintentional, and threatens to collapse the ensemble into disarray. What often happens here is similar to the preparation for the cue: the ensemble scrambles to recreate compatible conditions that would clearly instruct individual members how to cohere once again as a collective agent.

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85 See, for example: Berliner, *Thinking in Jazz*, 209-16, 269, 398.
One such miscommunication occurred on September 29, 2003, when the Disco Biscuits performed “Little Betty Boop.” Almost all performances that include a jam into “Betty” feature a motivic cue in the keyboard part:

Example 19: The Disco Biscuits, “Little Betty Boop,” motivic cue (keyboard)

![Motive](image)

The motive appears toward the end of a keyboard solo, just as the upcoming composition is about to begin. In fact, every other performance that year progressed this way:

Example 20: The Disco Biscuits, “Little Betty Boop,” 2003 performance history and timelines

<table>
<thead>
<tr>
<th>Date</th>
<th>Venue</th>
<th>Jam</th>
<th>Motivic cue</th>
<th>“Little Betty Boop”</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 13, 2003</td>
<td>Roxy Nightclub</td>
<td>Track 4 [8:56 -- 15:16]</td>
<td>Track 5 [0:00 -- 0:05]</td>
<td>Track 5 [0:05 -- ]</td>
</tr>
<tr>
<td>July 3, 2003</td>
<td>Belly Up Tavern</td>
<td>Track 4 [2:38 -- 13:06]</td>
<td>Track 5 [0:00 -- 0:05]</td>
<td>Track 5 [0:05 -- ]</td>
</tr>
<tr>
<td>August 7, 2003</td>
<td>Amazura Ballroom</td>
<td>Track 2 [11:36 -- 24:59]</td>
<td>Track 3 [0:00 -- 0:05]</td>
<td>Track 3 [0:05 -- ]</td>
</tr>
<tr>
<td>August 18, 2003</td>
<td>Visulite Theater</td>
<td>Track 5-6 [2:55 -- 0:19]</td>
<td>Track 6 [0:19 -- 0:23]</td>
<td>Track 6 [0:23 -- ]</td>
</tr>
<tr>
<td>October 28, 2003</td>
<td>The Library</td>
<td>Track 2 [3:51 -- 27:39]</td>
<td>Track 3 [0:00 -- 0:05]</td>
<td>Track 3 [0:05 -- ]</td>
</tr>
</tbody>
</table>

The September 29 performance, however, did not stick to this pattern:

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87 Setlists including “Little Betty Boop” were confirmed on [www.phantasytour.com](http://www.phantasytour.com), an online fan base. See: [https://www.phantasytour.com/bands/bisco/songs/2489/little-betty-boop](https://www.phantasytour.com/bands/bisco/songs/2489/little-betty-boop). I was unable to locate a recording for the show on April 24, 2003 at the NorVa (Norfolk, VA), and so have not included that instance on this table.


Instead, this example reveals a missed motivic cue, recovery, and reattempted motivic cue. Leading up to the first cue, from measures 29–32, the bassist (Brownstein) can be heard prolonging a dominant harmony while the drummer (Altman) supplies an extended drum fill. The keyboardist (Magner) seems to recognize the preparatory nature of those events, and responds with the motivic cue from measures 33–36 (see transcription, Example 22). Consistent with nearly every other recording of this transition, what should have followed is the beginning of “Little Betty Boop.” Instead, at measure 37, the keyboardist continues to improvise in the old key of E. A collective breakdown ensues, as the bassist and drummer begin their composed parts (until they recognize the miscommunication a few beats later).³⁸⁹

³⁸⁹ The jam implies mixed modes: E Mixolydian in the guitar part, E major in the keyboard part, and E Phrygian/Dorian in the bass part.
Example 22: The Disco Biscuits, Transition into “Little Betty Boop,” transcription

The synthesizer transcription is only a close approximation. Magner uses a synthesizer with a lot of reverberation and “echo,” such that attacks points, as well as register, are difficult to identify.

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90 The synthesizer transcription is only a close approximation. Magner uses a synthesizer with a lot of reverberation and “echo,” such that attacks points, as well as register, are difficult to identify.
In the real time of performance, the missed cue calls for a speedy recovery. This occurs across measures 37–60, as the ensemble manages to recover from the misalignment of their parts, regroup, and then successfully re-cue the upcoming composition. The first striking change is the harmonic and rhythmic simplification of the bass and guitar parts. Leading up to the cue, the bass and guitar parts were both rhythmically active and harmonically chromatic. Following the botched transition, the two players switch to unsyncopated, repeated notes: E in the bass and B in the guitar. The performance suggests that the rest of the band, unsure of the formal orientation at that moment, decided to play something safe: tonic chord tones. Meanwhile, the
keyboard part fumbles around a few bars, drawing from both the previous chordal style and the motivic cue seemingly at random.

By measure 49, the band has reestablished the combination of textures and themes that had defined the jam just prior to the first motivic cue. In measures 49-52, the keyboardist methodically liquidates the duration of his block chords from whole notes to quarter notes, using the accelerated rate of attack to signify an upcoming event. This methodical doubling of rhythmic values to signify formal sections is a frequent fixture of electronic dance music, a genre Aron Magner surely knows. Following this four-bar section, the keyboardist plays his one and only melody from the excerpt, relying on the textural shift from chordal to melodic to confirm the end of the improvisation to the rest of the ensemble. The second motivic cue at measure 61, this time successful, fulfills the expectations created by the first one. With the added relief that such an ordeal is over, the band finally—and collectively—begins “Little Betty Boop.”

**Conclusion: Cueing Systems and Taking Risks**

The traditional lines of discourse on riskiness in improvisation emphasize its relationship with predictability. Predictability means anticipation, and anticipation means having more time to contemplate decisions. So, in the higher-paced context of improvisation, riskiness should be

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91 This methodical doubling of rhythmic values to signify formal sections is a frequent fixture of electronic dance music. See generally: Mark Butler, *Unlocking the groove: Rhythm, meter, and musical design in electronic dance music* (Indiana University Press, 2006).

right at home. In Berliner’s tome on jazz improvisation, risk is the transactional cost of adventurous, novel playing. He writes: “Not all artists are willing to tolerate risk in equal measure. One musician expressed his reluctance to ‘live with sounding bad for six months or more’ as he gradually mastered fresh materials and learned to integrate them successfully into more familiar vocabulary.” This is the risk of sounding bad.

Collective improvisation, which enhances the unpredictability of future events by dispersing improvisatory authority across multiple individuals, should be proportionately riskier. In theory, ensembles that engage in collective improvisation enhance individual autonomy to the point that collective improvisation becomes problematic. The task of transitioning from a primarily individual mode of performance to a collective one is dangerous: one or more agents may fail to recognize a signal, fail to react in time, fail to deliver any cue at all, or perhaps attempt to deliver a cue at the same time as another player. This is the comparatively greater risk of sounding wrong.

Yet this risk seldom actually realizes; there is a clear misalignment between actual risk and the perception of risk. After all, cases in which cueing systems function as safety nets are very hard to find. More often cueing systems remain below the observable surface, quietly enabling the sophisticated musical events that stun and amaze.

Moreover, such events do not constitute the majority of live performance. Jams can last five to fifty minutes, but the spectacular events requiring a cueing system last a minute or less. Collective actions and the cueing systems attached to them tend to have short timelines, because the restrictions they impose on personal freedoms encourage musicians to limit their durations. However, while individual agency finds greater expression outside of collective actions, this does not indicate that the temporal majority of jams are chaotic and random. Even beyond the

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93 Berliner, Thinking in Jazz, 218, 272-73.
confines of cueing systems, organizational forces seem to be active. Chapter Three aims to discover them.
III

THE MUSICAL FORMS OF COLLECTIVE IMPROVISATION

Improvising musicians develop and act upon their intentions in relatively quick succession, especially as compared to the deliberate process of composition. Jams, of course, can be quite lengthy; the improvised expanses between compositions or composition-like sections can range from a few minutes to an hour or longer. The striking asymmetry between the brief lifespan of an improvisatory intention and the large scale of jams suggests that jams are unlikely to be more than assemblages of short musical ideas, crudely stitched together. To complicate matters, collective improvisation relies on a measure of cooperation and coordination among players in order for them to realize their individual intentions. Given the constraints of group agency, are players’ collective efforts able to give rise to form?

When asked about the forms of improvisation, John Medeski had the following response:

JOHN MEDESKI: We’re moving it along: bing, bang, boom. Everything we do is creating something in the moment, that’s happening, but it’s also suddenly relevant to what just happened. As the second and minutes pass, all that stuff is accumulating. Here we are, four minutes in, and all this stuff has happened and accumulated, and it’s come to here. And at this point, the past four minutes is its own thing that exists because the three of us have made it happen. It’s not mine; it’s not Billy’s; it’s not Chris’s. It’s ours.94

This remarkable answer reflects a rich variety of musical values. Medeski acknowledges that improvisation occurs “in the moment,” but also points out the importance of cultivating

94 John Medeski, interview by Christopher Gupta, June 28, 2016.
relevance from moment to moment. Relevance, combined with the sense of collective ownership that the ensemble feels for the performance, helps elevate the improvisation to the level of “its own thing”: presumably, a musical event or work with a robust ontological status. His answer also spawns a variety of questions: what is relevance? Why does collective ownership have this power? And, most importantly, what kinds of forms can accumulate under these conditions? This chapter aims to answer these questions and, in the process, shed some light on the concept of form in improvisatory music.

Some Preliminary Theoretical Obstructions

“Form” is an open concept. It is a theoretical construct made purposefully vague in order to relate to virtually all music. But applicability comes at the cost of precision. As Arnold Whittall writes, “[form is] the constructive or organizing element in music… Practice particularizes, just as theory generalizes, and discussion of musical form has been especially vulnerable to the tensions which arise between these very different ways of thinking.”95 So in order to discuss a theory of form in the practice of improvisatory music, a few clarifying details are in order.

Form, according to Whittall, is not the construction or the organization of music, but the constructive or organizing element in music. This interesting turn-of-phrase suggests that form organizes music by acting upon it, and by extension, that the genesis of other musical elements, such as pitch or time, must come first. The definition situates form outside of the music itself, and it implies the presence of principles that describe how and why a musical form is so

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organized; in contrast, an account of musical form lacking such principles, if even conceivable, would be arbitrary.

Theorists of form have demonstrated an interest in explanatory principles. For example, James Hepokoski identifies a “rotational principle” and a “reiterative principle” at work in his account of form in the music of Sibelius; William Caplin documents a “principle of periodic formation” in the forms of instrumental, classic-era music. Of course, Hepokoski and Caplin do not “invent” these principles; they (and others) encapsulate them by selecting a representative sample of musical examples, identifying the most widespread formal patterns, promoting those patterns to the status of “principle,” and finally testing those principles within a larger sample. For example, prior to articulating his reiterative principle, Hepokoski points to “insistent repetition” as “one of the features of the earlier Sibelius style,” thus selecting a widespread formal pattern within a representative sample. He later recalls this principle within his analysis of Sibelius’ Fifth Symphony, thus testing it within a larger sample. This process positions musical examples, musical forms, and formal principles on a kind of Mobius strip, in which adjustments at one point on the strip continuously transfer to other points on the strip. As Robert Hatten aptly writes: “In the sense that styles and works are different ontological categories, there will always be an irreducible and productive interaction between the two in terms of their reconstruction by the theorist/historian.” The reciprocal relationship between principles and style guarantees that the same principles should apply to examples of the same musical style. As John Covach has written in a short primer on form in rock music, “In many ways, form in rock music raises a number of interesting questions about form in music generally. . . Perhaps this ought to

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encourage analysts to think of form in more flexible terms when dealing with other music as well.”

Of course, not all principles pertaining to form derive from musical style. Others logically arise from the specific definitions of musical objects themselves. For example, the minuet and trio hardwires three subsections into its examples, by definition: the minuet, the trio, and the minuet da capo. As a principle, minuet-and-trio movements should include these three subsections. These kinds of principles point out obvious features of musical genres. They also have little extensibility—that is, the definitional guidance that a minuet and trio has three sections would not apply outside of this narrow context. Yet within that context, definitional principles are indisputable (i.e., without minuet and trio subsections, such an example could not be a minuet and trio). Definitional principles rely on logic, whereas stylistic ones rely on correlation.

These observations serve to caution the analyst that the extensibility of formal models to new musical contexts, like collective improvisation, relies on a careful audit of the stylistic qualities attached to the genre of that new context. Yet improvisation and collective improvisation are not genres; they are modes of music-making that cut across genres. As Dahlhaus observed, “In the theory of form the features common to musical works counted as essential, whereas the distinguishing ones were regarded as being inessential. The theory of form was a description of genres.” Dahlhaus continued: “A theory of the new and newest music…would have to establish the possibility of appraising musical forms without invoking

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concepts of genre.” His words ring especially true here. In order to identify the markers of form in collective improvisation, we must reevaluate the conventions of collective improvisation.

The essential qualities of collective improvisation—that it is both collective and improvised—substantiate some definitional principles as guidance. Logically, if either collectivity or improvisation lapses, it signifies a lapse in collective improvisation itself. I read such events as indicators of formal divisions, because they break the most basic conventions of the style. If a definitional principle it not met, then the musical form itself is delimited.

One musical event that indicates a lapse in collective improvisation (in the scope of this dissertation) is the loss of pulse. Pulse is a bedrock requirement of collective improvisation for the genres under discussion, and its absence creates a temporal severance that makes collectivity extremely difficult. It is the conveyance for musical memory, without which the sense of harmonic function, meter, and phrase rhythm is lost. John Medeski describes the role of pulse in collective improvisation thus:

CHRISTOPHER GUPTA: Let me ask you about rhythm and groove... How do you think of the role of pulse in your music? Because sometimes I can hear a consistent pulse, and other times it seems to dissolve away. How do you use pulse to organize the music or to keep it going?

JOHN MEDESKI: It’s one way to organize things. It’s one way to provide something reassuring and steady. It’s one way to make people move. But that’s another thing that

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101 This claim pertains to the genres primarily under discussion in this dissertation. Free jazz, for example, does not figure prominently here because of the high variability of pulse in that music—it often fails to meet the “collectivity” aspect of collective improvisation.
we’ve practiced and worked on. It’s playing a groove, letting it fall apart, and then come back together again.

CG: How do you get back together again?


CG: I understand the analogy, but you’re a group of three. There are two trains. How do you jump on two trains?

JM: No, there’s one train. The music is the train, and that’s what I mean when I say you really need to let the music have a life of its own. It’s got its own life, and we’re each doing whatever’s necessary for us to do to keep it going and growing and moving—or not!—or holding steady, whatever that is.102

Here, Medeski describes the process of restoring a groove through the analogy of catching a moving train (which, interestingly, represents the music). By letting the groove “fall apart,” the individual ensemble members face the challenge of coming “back together again.” More importantly, he acknowledges the potential of pulse to function as “one way to organize things.” As if recalling Whittall’s definition of form as “the organizing element in music,” Medeski seems to recognize the potential of pulse to indicate formal events.

102 John Medeski, interview by Christopher Gupta, June 28, 2016.
Assuming that losses of pulse entail formal divisions enables the identification of subsections and thus provides a working framework for an account of form in improvised music. Next, what happens within these subdivisions to promote continuity or cohesiveness, and how do these subdivisions relate to each other? One way to frame these questions is to focus on the extreme cases. At one extreme are improvisations that do not subdivide at all and manifest continuity from end to end (the “continuous development” model). At the other are improvisations with frequent discontinuities, manifesting continuity only in short and potentially unrelated vignettes (the “episodic” model). Because losses of pulse constitute the only marker of form at this point in the argument, all formal types would have to fall within this spectrum. There are examples of both these extremes of the spectrum in the literature of collective improvisation, and analyzing them helps to clarify what happens in the more populous middle.

With no subdivisions of note, the continuous development model allows for the examination of the ways in which lengthy improvised sections maintain a sense of cohesiveness. (The episodic model does the opposite: while it deemphasizes the cohesion question, it emphasizes the question of interrelation among sections.) Cohesiveness is another open concept however, and not just in music; it is one of the issues at stake in the ancient paradox of the ship of Theseus. This mythical king kept his ship in the Athens harbor, where for centuries it was maintained in seafaring shape by replacing the rotted planks, one by one, with fresh sturdy planks. In one sense, it was thereby preserved. But in another sense, the original ship slowly disappeared, as eventually not a single plank from its original construction remained. The continuous development model works exactly this way: the ensemble starts and ends with
distinct musical objects, and it connects the two via a seamless process in which the improvisation is adjusted one “plank” at a time. Thus, each moment in the improvisation shares a great deal with what immediately preceded and what will immediately follow, but shares less and less as the temporal distance between those moments increases.\(^\text{103}\) This is, perhaps, what Medeski meant by “relevance.”

The continuous development model requires the exercise of restraint through repetition. Even as individual musicians slowly alter and develop their parts, the slow rate of change across the entire ensemble preserves strong links of continuity from moment to moment. Thus, the jam seems to progress seamlessly. In this sense, the continuous development model of improvisation is a grand reworking of compatible conditions, stretched out forward and backward in time such that there are no formal discontinuities.

The December 29, 2002 performance of “Reactor” into “Rock Candy,” an example of the continuous development model, showcases both gradual motivic variation and methodical scalar shifts.\(^\text{104}\)

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Connecting these two compositions via a jam constituted a significant collective challenge due to the striking dissimilarities between their respective melodic and harmonic makeup. “Reactor,” in F minor, features steep melodic leaps, while “Rock Candy,” in E minor, emphasizes stepwise melodies. (A transcription of this jam can be found in Appendix 1.) Despite these differences, the band achieved the transition by adjusting modal content and motivic contour of their ostinatos slowly, reducing the drastic contrast between the two songs down to a series of subtler shifts.

The following analysis identifies some of the ways in which motivic repetition and modal continuity make this excerpt an exemplar of the continuous development model.

Motivic repetition is, perhaps, the most striking quality of this excerpt. The jam parses into long segments of repeated measures in which the individual parts remain more or less the same. For example, the guitar and bass parts at the onset of the jam extend through the first 68 measures:

<table>
<thead>
<tr>
<th>Opening</th>
<th>Transition</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm. 1–164</td>
<td>mm. 171-205</td>
<td>mm. 206–252</td>
</tr>
<tr>
<td>track 6, ca. 3:47–9:06</td>
<td>track 6, ca. 9:12–10:22</td>
<td>tracks 6–7, ca. 10:22–0:03</td>
</tr>
<tr>
<td>Characterized by slowly changing ostinatos in all parts; frequent imitation; very cooperative; clear metric/rhythmic structure</td>
<td>Characterized by increasing chromaticism and rhythmic activity, especially in guitar and keyboard parts; eventual “modulation” from F minor to B (as dominant of E)</td>
<td>Characterized by emergence of guitar solo; ostinatos held as band prepares for cueing system; rhythm section reinforces sixteen-bar groupings</td>
</tr>
</tbody>
</table>

Figure 1: “Reactor” into “Rock Candy” jam, the Disco Biscuits, performance timeline
Example 1: “Reactor” into “Rock Candy,” opening guitar and bass motives

While the guitarist and bassist do vary these motives, they keep certain aspects of them intact, so as not to disrupt the sense of continuity from moment to moment. For example, despite modest alterations, the bass motives from measures 1–99 all emphasize an oscillation around F2 and a rhythmic intensification on beat two:

Example 2: “Reactor” into “Rock Candy,” bass motives, mm. 1-99

a. mm. 1-56, 69-72

b. mm. 57-68

c. mm. 73-84

105 Measure ranges are “broad strokes:” they represent excerpts where motives are prominently if not exclusively featured. Measure-long alternations between variations have been excluded for the sake of simplicity.
d. mm. 85-99

This process of retaining elements from motive to motive helps to blur the lines between these motivic groupings. Adjacent segments of repeated measures seem to flow into each other, rather than turn on a dime, because the end of one resembles the beginning of the next. For example, the keyboardist takes care to maintain certain rhythmic qualities across several different motives (Example 3). The keyboardist seems to favor several motivic similarities that reinforce the sense of continuity from motive to motive: the rhythmic component of an accented sixteenth followed by a hanging eighth note; upward-leaping thirds; and the durational length of a half-bar. In addition to this strategy, the keyboardist also employs a “transition” motive from mm. 103–104 (Example 3b). This comparatively shorter piece bridges the disparity between Example 3a and 3c.

Example 3: “Reactor” into “Rock Candy,” keyboard motives, mm. 81-148

a. mm. 81–101

b. mm. 103–104

c. mm. 105–111
The performance also features motivic repetition via imitation between instruments. At measure 73, for example, the bassist seems to invert and imitate the guitarist’s melodic motive from measure 69:

Example 4: “Reactor” into “Rock Candy,” imitation between bass and guitar, m. 73 (ca. 6:07) \(^{106}\)

\(^{106}\) The low E♭ in the bass part is not an error; Marc Brownstein, the bassist for the Disco Biscuits uses a five-string bass tuned down to a low D♭.
The bass part preserves not only a similar contour but also the semitonal relation between the two oscillating pitches. Interestingly, the bassist abandons the motive just as the guitarist shifts to another motivic idea, bolstering the interpretation that this is an example of imitation between musicians.

The modal transformation across the excerpt relies on a strategy of using heightened chromaticism to obscure the underlying “modulations” that occur. Across the first subsection, the band gradually expands pitch material until, under the heavy chromatic cover that characterizes the second subsection from mm. 171-204, the band reorients the jam around B, the dominant of the upcoming tonic (E). The final subsection consolidates this modulation and features a guitar solo, instigating the first step in a cueing system.

Thus, the process aligns the gradual chromaticization of F minor with the eventual arrival of a cueing system, synchronizing the moment of harmonic resolution with the resolution from improvisation to composition. First, the bassist chops away at the stability of F minor, preparing the ensemble for the chromatic middle section:

Example 5: “Reactor” into “Rock Candy,” gradual disintegration of F tonic in bass motives, mm. 129-250 (ca. 7:56–0:00)

a. mm. 129–170

b. mm. 171–180
c. mm. 181–207

Meanwhile, the keyboardist plays a series of thirds rising chromatically by semitone from A/C-sharp to D/F. The last of these, from measures 176-177, yields to an oscillating pattern between C and G-flat, creating abrasive dissonances with the B-natural in the bass part and the F-natural in the guitar part, respectively:

Example 6:  “Reactor” into “Rock Candy,” mm. 176-77
After a brief pause from measures 177–188 (ca. 9:29–9:52), the guitarist and keyboardist resume the climb up the chromatic scale. This time, while the guitarist adheres strictly to the chromatic scale, the keyboardist makes some unusual adjustments to his part, skipping and repeating notes seemingly ad hoc (Example 7). As a result, the two players progress through the chromatic space at different rates, sometimes aligning and sometimes not. The disjunction contributes to the sense of chaos throughout the section, further obscuring the tonal shifts taking place beneath the surface.

Example 7:  “Reactor” into “Rock Candy,” synthesizer part, mm. 188–204 (ca. 9:52–10:21)
By measure 196, halfway through the second chromatic climb, the object of focus shifts from the keyboardist to the guitarist. The guitarist continues the ascending pattern up to B, and the keyboardist assumes more of an accompanying role. Thus, the band prepares the listener for the guitar solo while also consolidating the harmonic transition from F to B, as dominant of E. Finally, at measure 205, a guitar solo emerges that prolongs the new dominant, and initiates the final steps in a cueing system to the upcoming composition, “Rock Candy.”

The methodical adjustments to pitch content and motivic contour make the December 27, 2002 transition from “Reactor” to “Rock Candy” an exemplar of the continuous development model of large-scale improvisation. The primary characteristic distinguishing this model from the other form type, the episodic model, is the seamlessness of the improvisation between the two compositional bookends, even within transitory passages. Continuous development may feature multiple themes, but there are rarely, if ever, demarcated points where one cedes to the other. Indeed, even though the above example splits the jam into three significant subsections, the salience of these events is undercut by continuity in other domains. In the case of this performance by Disco Biscuits, motivic repetition is a very prominent strategy for controlling the rate of change within the continuous development model. Thus, this model fosters lengthy improvisations through subtle variations that take a long time to produce distinct thematic material.
The continuous development model illuminates one facet of the role of cooperation in collective improvisation: in order to move the music forward, players have to share the roles of leading and following. On this point, John Medeski had the following to offer:

JOHN MEDESKI: One thing with Medeski, Martin & Wood… is we don’t just take a groove and jam on it for twenty minutes. We really will go out there without one idea, without talking about anything, and just start playing and see what happens. Let the music completely come from nowhere… I mean, someone is always going to take the lead at any given second but that can change any second. And that’s something with Medeski, Martin & Wood that we really play with. Sometimes I’ll be soloing, but I’ll be following Billy [Martin] or Chris [Wood]. Or I’ll be really listening to the drums and just reacting to what he’s doing. I won’t be playing expecting him to follow me, and other times they’ll be following me, or Chris will be following me. It’s really a democratic situation with that band.107

This is especially true for the Disco Biscuits example. Up until the emergence of the guitar solo at measure 205, the excerpt features a relatively democratic distribution of influence across the various band members, such that no single person exercises a disproportionate amount of control over the overall output. Instead of assigning conventional instrumental roles (e.g., the guitarist as the primary soloist), the band favors a more egalitarian framework, such that individual parts share the responsibilities of soloing and accompanying. The literal, individualistic meaning of “soloing” breaks down as the aesthetics of performance shift from flash and virtuosity to craft

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107 John Medeski, interview by Christopher Gupta, June 28, 2016. Italics mine.
and cooperation. The resulting musical product is a highly stratified assembly of individual
ostinatos.

But collective egalitarianism to this extent is unusual. Many ensembles grant the guitarist
or other lead melodist an enhanced degree of autonomy. Live performances of Phish, for
example, strongly suggest that the lead guitarist Trey Anastasio has heightened decision-making
authority, such that he can act without coordinating his intentions with the other musicians. On
December 30, 2009, the band improvised a transition from “Boogie on Reggae Woman,” a
Stevie Wonder cover, to one of their own compositions, “Run Like an Antelope.” Instead of
using a cueing system, Anastasio simply interrupted the improvisatory section with the
beginning of “Run Like an Antelope.” Without the due warning of a cue or the methodical
sequence of compatible conditions, the other band members continued to jam for a few seconds
before hearing the collision of the different parts and scrambling to resynchronize with the
guitarist. The logistical challenge of acting collectively is completely upended by delegating all
decisions to just one individual, relegating the impossible task of mind reading to everyone else.
This is the product of an imbalance in the distribution of autonomy allotted to the different
individuals within an ensemble.

Two Extremes of Large-Scale Improvised Form: The Episodic Model

The primary difference between the continuous development model and the episodic
model is the presence of formal subsections via losses of pulse. Whereas the continuous
development model preserves similarity from moment to moment and thus forecloses the

108 A recording is available for purchase at: http://www.livephish.com/browse/music/0,525/Phish-mp3-flac-
download-12-30-2009-AmericanAirlines-Arena-Miami-FL.
possibility of formal subsections, the episodic model fosters length simply by appending additional improvised vignettes, which are clearly demarcated by unmetered, pulseless interludes. “Interludes” are sections which fail to meet at least one of the criteria of collective improvisation: “collectivity” or “improvisation.” These interludes delimit “episodes,” which are sections that meet those requirements. Thus, this style of performance shifts the emphasis from maintaining continuity between sections to restoring continuity within them. This process of restoration relies on compatible conditions, as it graduates the transition from individual to collective agency into incremental steps. Yet on account of the nature of formal discontinuity in collective improvisation, it also faces the challenge of reestablishing a shared sense of meter. As a result of this graduated process, the precise moment an interlude yields to an episode can be fairly subjective.

The June 28, 1974 performance of “Weather Report Suite” by the Grateful Dead illuminates the episodic model of improvised form.109 Across the near forty-five-minute rendition that night, the band structured the improvisation by alternating brisk, metered episodes with slow, largely unmetered interludes:

Figure 2: “Weather Report Suite,” The Grateful Dead, sequence of major events

<table>
<thead>
<tr>
<th>Track 19</th>
<th>Track 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00</td>
<td>5:00</td>
</tr>
</tbody>
</table>

(1): “Weather Report Suite” (ca. 0:00–11:42); play-through of “Prelude,” “Part I,” and “Part II (Let it Grow)”
(2): First Episode (ca. 11:42–0:27)
(3): First Interlude (ca. 0:27–7:54)
(4): Second Episode (ca. 7:54–13:20)
(6): Third Episode (ca. 14:36–20:45)
(7): Third Interlude (ca. 20:45–25:40)
(8): Fourth Episode (ca. 25:40–27:54)

The most striking quality of this recording, especially to initiates to the genre, is the sudden disintegration of a consistent pulse around 0:39 of track 20, at the end of the first episode, and its gradual reemergence toward the end of the first interlude:

Figure 3: “Weather Report Suite,” partial transcription, performance timeline

<table>
<thead>
<tr>
<th>First Episode</th>
<th>First Interlude</th>
<th>Second Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm. 1–123</td>
<td>mm. 117–295</td>
<td>mm. 296–308</td>
</tr>
<tr>
<td>ca. 11:42–0:39</td>
<td>ca. 0:27–7:54</td>
<td>ca. 7:54–8:24</td>
</tr>
</tbody>
</table>

Characterized by short melodic ideas, briefly shared among the band and discarded; fairly cooperative; clear metric/rhythm structure
Characterized by lack of pulse; ad hoc gestures, primarily in first and second guitars; keyboardist and drums drop out
Characterized by gradual reemergence of meter and key; previously absent band members rejoin ensemble; blues-based groove
A transcription of this jam can be found in Appendix 2. The following analysis investigates how the band uses pulse as a structuring tool from the beginning of the jam to the beginning of the second episode.

In many ways, the first episode typifies the energetic improvisatory style of the Grateful Dead. Compared to the Disco Biscuits’ “Reactor,” with its constant repetition and slow rate of change, the “Weather Report” jam features quick changes and less emphasis on repetition. Instead, the band emphasizes gesture and groove, fostering short, intra-episodic vignettes delineated by changes in musical texture. For example, from measures 1–55, the first of these presents multi-measure phrases in the lead guitar part over an E minor vamp in the rhythm section. An excerpt from measures 15–18 exhibits these characteristics (Example 8). The lead guitar part indicates a quasi-periodic structure, as an initial two-bar phrase ends on the leading tone A-sharp, and the consequent two-bar phrase resolves back to B. Meanwhile, the rhythm guitar and keyboard parts confirm the underlying modality with extended E-minor chords. Similarly, a textural change in the keyboard, bass, and drum parts at measure 56 marks the beginning of the second vignette.

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110 This transcription begins at the beginning of the first episode (track 19, 11:42) and ends in the middle of the second episode (track 20, 8:24). The presence of dashed barlines throughout the first interlude in the transcription is not meant to imply that any sense of meter is quietly at work in the background; it is purely an analytical convenience such that individual bars can be identified in musical examples. This disclaimer is especially important in light of the analysis of the transition from the first interlude to the beginning of the second episode, in which the emergence of a shared sense of meter plays a major role. In that case, the convergence of parts onto what was beat one of the first episode serves the additional purpose of helping to indicate how the metric parts of the harmonic progression there are settled out.
Example 8: “Weather Report Suite,” mm. 15–18

In contrast, the first interlude features the withdrawal of the keyboardist, drummers, and any sense of pulse, as the two guitarists (and occasionally the bassist) play chromatic and atonal melodies in independent *ad libitum* tempos. The loss of pulse renders attempts at collective
action almost completely futile. Instead, the section consists of a series of short improvisatory experiments, as if guitarists Jerry Garcia and Bob Weir are simply looking for the right combination of motives and metric patterns to generate the second episode.

Interludes, in addition to their abstract significance as a formal boundary, also fulfill certain practical requirements in the context of performance. In this performance of “Weather Report Suite,” the first interlude lasts seven minutes—nearly twice as long as the first episode. The time is needed not just to compartmentalize the first episode, but to enable the second episode at all. Through the course of this middle section, the two guitarists develop independent but compatible musical ideas and slowly work to converge them, laying the groundwork for what will become the second episode.

Interestingly, the first interlude typifies another dimension of the Grateful Dead’s improvisatory style. In the absence of pulse and harmony throughout the middle section, the focus remains on gesture and timbre and the accidental collisions among band members. A short excerpt from mm. 138-141 is representative (Example 9). Meter is nowhere to be seen, as the musicians are diligent to avoid any kind of periodicity. Little sense is to be made of the pitch collections either. The tight chromatic collections in the rhythm guitar and bass are neither coordinated nor suggestive of a harmonic progression in their own right. Instead, the band creates a momentary yet evocative musical fragment that showcases the unpredictability of collective free improvisation.

Due to the experimental nature of interludes, the ensemble occasionally seems on the verge of entering another episode. These moments are the product of sudden rhythmic patterns in

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the second guitar that suggests some kind of metric periodicity and the lucky synchronization with a melody or melody-like pattern in the lead guitar. The first time this happens is at measure 188 (Example 10). Here, as in the pattern that will ultimately generate the second episode, the sudden presence of metric periodicity in the rhythm guitar gives the impression of collective formal and thematic organization.

Example 9: The Grateful Dead, mm. 138-141 (“Jam,” 1:27-1:35)

Example 10: The Grateful Dead, mm. 188-152 (“Jam,” 3:23-3:33)

Besides metric periodicity, a few other factors contribute to the sensation that the excerpt is the beginning of something new, and not a continuation of the same transitory material. First is the
sudden shift in the lead guitar to a primarily diatonic pitch collection. With the exception of the mixture of both flattened and diatonic seventh in measure 189, the first guitar emphasizes a clear dominant seventh harmony on B. Second is the unusual level of coordination with this pitch collection in the rhythm guitar, which articulates a i–V–i progression over a dominant pedal. The idea must not quite satisfy however, as both guitarists have abandoned it by measure 192.

A metric and harmonic framework is in place by the time the full ensemble has reached the second episode, around measure 296. The eventual framework for this episode is a twelve-bar schema in A Mixolydian (Example 11). The schema consists of a two-bar vamp in the tonic, repeated four times for a total of eight measures, and a two-bar vamp in the dominant, repeated twice for a total of four measures.


Pulse, meter, and mode emerge gradually from the murky interlude, as the framework takes shape (see Figure 4). At measure 234, Garcia lingers on a loud, resonant A6, suggesting A as a tonal center. The earliest articulation of tonic vamp appears in measure 237, about three minutes (or sixty bars) before the start of the second episode (Example 12). Even here, the rhythm guitar part features the chromatic descent in parallel sixths from the upcoming harmonic progression (Example 11, mm. 1-8), though with several interesting deviations. First, the
temporal proportions of each harmony are offset from the eventual pulse and meter. The progression comes in on beat four instead of beat one, each chord lasting a quarter note instead of a half note. Second, the rhythm guitarist reverses the progression at the end, ascending back up to a D major chord. The next two iterations, from mm. 239-243 methodically “correct” each of these deviations (Example 13).

Figure 4: The Grateful Dead, transition into second episode, performance timeline

<table>
<thead>
<tr>
<th>m. 234–255</th>
<th>m. 256–289</th>
<th>m. 290–295</th>
<th>m. 296–</th>
</tr>
</thead>
<tbody>
<tr>
<td>ca. 5:00–5:59</td>
<td>ca. 5:59–7:36</td>
<td>ca. 7:36–7:54</td>
<td>ca. 7:54–</td>
</tr>
<tr>
<td>Garcia signals A as new tonic; Weir introduces (and adjusts) new harmonic progression; Garcia searches for common downbeat; drums, bass, and keyboards still inactive.</td>
<td>Weir solidifies first eight bars of harmonic progression and aligns with consistent meter; Garcia merges with Weir and starts taking solos over progression; drums and keyboards reenter; bass still inactive.</td>
<td>Bass reenters with several failed attempts to move harmonic progression to dominant.</td>
<td>All instruments successfully move to dominant, demonstrating clear alignment of intentions; transition completes.</td>
</tr>
</tbody>
</table>
Example 12: First Interlude, second episode schema, first iteration (track 20, 5:16–5:20)

From mm. 239-241, the first, third, and fourth chords of the progression are stretched from one beat to two; by mm. 241-243, the sequence is nearly identical to the operative framework (Example 11).

Example 13: First Interlude, second episode schema, later iterations

a. Second iteration (track 20, 5:21–5:26)

b. Third iteration (track 20, 5:26–5:31)
By measure 256, the two guitarists have restored a shared sense of pulse. Arguably, this marks the end of the first interlude and the beginning of the second episode. However, a few asynchronicities take place as the other instruments reenter the jam, suggesting that the ensemble is not yet operating collectively. For example, the dominant vamp (Example 11, mm. 9-12) finally appears at measure 296, but only after a few failed attempts. The first of these occurs at measure 290, when the bass guitarist picks up for the first time since measure 171 and plays an E, unambiguously suggesting the dominant harmony of the two-bar vamp:

Example 14: The Grateful Dead, bass cue, first iteration (track 20, 7:33–7:43)
Example 15: The Grateful Dead, bass and keyboard cue, mm. 291-292 (“Jam,” 7:43-7:49)

The bassist quickly drops out when, without the due warning required to anticipate such a cue, the lead and rhythm guitarists continue playing in A. However, the keyboardist, likely recognizing the bassist’s intention to shift to the dominant, attempts exactly the same harmonic move two bars later (Example 15). It is not here, but after yet two more iterations of the harmonic progression that the guitarists form and act upon the same intention to switch to the dominant harmony (Example 16, measure 296).
Following this four-bar section, the band continues the pattern of eight plus four bars until yielding to another pulseless transition section, several minutes later. Therefore, this moment
offers the first observable shift in the collective intention of the ensemble to play through a
second episode in this jam.

This style of improvisation problematizes the task of identifying the start and end points
of the interior sections of the jam. Eventually, the individual ensemble members merge their
improvisatory contributions to create a unified vision for the episode, as in Examples 12–13 and
14–16. The moment this unified vision is reached provides a reasonable basis upon which to
identify the start of the second episode. As a result, however, the ostensible first bar of the
second episode is actually the ninth measure of the underlying twelve-bar framework. To borrow
from Dahlhaus: the end of the interlude is not yet a subject, and beginning of the episode is one
no longer; the Grateful Dead go “straight from a protoform to developmental elaboration.”¹¹²
The second episode persists in a state of becoming, such that by the time the band converges on a
common intention, its formal beginning has already passed. The transition conveys the staggered
entrances of the individual parts into a collective whole.

_Between the Extremes_

An account of form based on lapses in collectivity furnishes a minimal basis for formal
models, but also calls for expansion and refinement. Basic frameworks like this invite the
development of formal subtypes as well as the scrutiny of fringe cases. With the theoretical
obstructions that initiated this chapter in mind, what are the potential areas for expanding this
account of form?

¹¹² This “not yet/no longer” construction comes from Carl Dahlhaus and Mary Whittall, _Ludwig van Beethoven: Approaches to his Music_ (Oxford University Press, 1991), 89, 117, 169-170.
For starters, lapses in collectivity could reflect markers other than losses of pulse, as the degree of instrumental participation, senses of melodic and harmonic closure, and other factors impact a listener or player’s interpretation. A scrutiny of fringe cases could potentially provide such gradations. Alternatively, if taking solos in turn constituted a secondary marker of formal division, then that mode of playing would similarly nuance the continuous/episodic spectrum.

Stylistic factors could add considerable variety and depth to accounts of form within subcategories of collective improvisation. The wide-ranging ways in which ensemble members interact with each other provide a richness to improvised music, without which the episodic and continuous development models are strikingly bare. Collective improvisation creates a kind of musical ecosystem in which ideas and intentions are continuously generated through spontaneous discovery and pruned back down through intra-ensemble competition. Collisions like this are an overt manifestation of the distance between the improvisatory ensemble as a group agent versus the ensemble as a group of individual agents. As John Medeski has said:

JOHN MEDESKI: Either you are accompanying and following so that you support them wherever they want to go, and that can also create magic, and as you’re listening and following, you add things that either concur with what they’re doing. You always have those options to either go along with what’s happening, do something different, or do something that forces it in a different direction.

CHRISTOPHER GUPTA: Sure, but even within those two categories of accompanying and leading you’ve got some fuzzy middle spaces, right? Sometimes it feels like more than one person is leading and it’s a negotiation.

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113 John Medeski, interview by Christopher Gupta, June 28, 2016.
JM: Well yeah, exactly. But in any negotiation, this requires listening and it requires understanding and open-mindedness for it to really truly be a negotiation. Because certainly in music you don’t want it to be a debate. It’s not going to be good.

CG: Well, that was kind of my next question actually, because sometimes conversations can have conflicts.

JM: And that happens too.

CG: How does that work?

JM: Well, then somebody’s going to yield. And I can say honestly sometimes for me somebody does something and I’ve been frustrated with their choice, but I have to go with it because it’s not going to sound good if I don’t.

Medeski hints at another force in collective improvisation: the prioritization of aesthetic values (‘sounding good’) over personal liberty (‘yielding’). This force is audibly at work in the “Weather Report Suite” excerpt, especially in instances like the end of the first interlude. The metric negotiation that took place there was indeed a “debate,” as Medeski puts it, in the sense that Garcia and Weir argued for one metric downbeat while Lesh and Godchaux had to yield to it.
While this prioritization is not universal, it hints at a conceptualization of form—and of collective musical products generally—as the organic output of chaotic, unpredictable interactions between musician personalities, intentions, and values. These interactions impact observable musical qualities, such as momentum and continuation, and (it would seem) are responsible for the musical forms that result.

However, individual musicians often rely on the coordination of other musicians to help bring their ideas to fruition. There is thus an incentive to develop well-formed musical ideas that might persuade other ensemble members to work cooperatively. Interactions are not irrelevant to form; they are the real-time inner critic for the improvising ensemble. Bands operate collectively when individual intentions align, and as a result of this, the persuasive power of majority rule causes some musical ideas to disintegrate and others to survive, in a kind of musical ecosystem. Form is the environment.

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114 Compare this prioritization to the “mutual subversion” that Derek Bailey describes. Chapter 1, “Introduction.”
IV

ON THE ONTOLOGICAL STATUS OF THE IMPROVISED WORK

“A Game for Super-Fans”

In a conversation with Jesse Miller, bassist for the band Lotus, questions aimed at musical ontology were often returned in practical terms:

CHRISTOPHER GUPTA: You’ve said that the composition doesn’t dictate, but maybe suggests how the jam will unfold. But you’ve also said that it has a hard stop and a hard beginning. How could it be both, where it permeates into the jam but it’s also intact?

JESSE MILLER: Well, I just mean there’s an end that we know is the end of what’s composed. And then, if you were charting it out, you’d maybe have A–B–A–Chorus–Bridge–A and then you’d have a part that was improvisation. And so, we all know we’re in that part. But it also might be like, “Ok, we’re improvising like this,” and then we know that we’re going to be improvising, we’re going to do this set change, and we’re going to be improvising in this slightly other style, and then there’s a way that we’re coming back. So even though it’s more open-ended, that’s already planned out.\footnote{Jesse Miller, interview by Christopher Gupta, June 15, 2016.}
The discrepancy between my intended question and his intended answer may reflect the contrary spirits of analytical ontology and transcendental improvisation—at least in part. Jam-band musicians reliably express skepticism toward analysis in interviews.\footnote{See generally: Chapter 1, “Demystifying Group Agency.”}

Yet in that same conversation, Miller later returned to the abstract concepts of beginnings and endings:

JM: I think other groups are deconstructing [their compositions] a little bit more. That leads me to the same question.

CG: You mean, how do they do it?

JM: No, like, what makes something an ending and a beginning unless you’ve just stated it on paper?

CG: What do you think they would say?

JM: I don’t know, I think it’s like these set list games that people play. Like, Phish started doing this shit where they were spelling out shit. It only matters if you’re down there writing it down. It’s just a game for super-fans. It doesn’t matter. If you just wandered upon it, you wouldn’t have any clue.\footnote{Jesse Miller, interview by Christopher Gupta, June 15, 2016.}
These “set list games” refer to an unusual behavior among fans of jam-band music. Concertgoers will often attempt to predict the identity of the next song or composition, based on prominent melodic and rhythmic features in the jam. This game requires a high level of fluency with a band’s style and oeuvre, such that listeners can interpret hints about the band’s intentions from their current actions. So, by drawing the comparison with set list games, Miller implies that questions pertaining to set lists and (by extension) musical ontology only matter to people who ask those questions, and only in the act of documenting the answer (“writing it down”). Outside of that narrow context, the significance of “this shit” is “just a game.”

Toward the end of that interview, I surprised Miller by informing him that a far greater number of concertgoers participate in those “set list games” than he previously thought. Rather than just a game for “super-fans,” attempting to parse the seams between compositions and improvisations is a popular component of the concert-going experience. By anticipating the content and timing of upcoming musical events, listeners engage with questions like “what makes something an ending and a beginning.” As a result, audience members demonstrate an awareness of some of the ontological issues that arise in heavily improvisatory music.

Interestingly, jam bands like Lotus enhance the control that audiences have over the reception of their music by generously allowing them to tape and distribute recordings of their live performances. Here, issues of musical ontology return. The early set lists of the jam band, the New Deal—published sparsely and almost entirely by devotees of the band and amateur tapers—do not include song titles. While user-generated knowledge bases often feature informational omissions, this case is different. As a young band in the early 2000s, the New Deal did not really have songs. Instead, concerts consisted of a series of what keyboardist Jamie

Shields called “30-minute instrumental improvised dance-type pieces,” with a tremendous amount of ad hoc internal repetition and little-to-no formal organization. These performances were essentially jams without the bookending songs. The apparent lack of songs in New Deal’s performance illuminates the mysterious status of collective improvisations. It would seem that these “30-minute dance-type pieces” are musical works (of some kind), self-contained and discovered through the course of improvisation. But then, are performances that feature those bookending songs comprised of two musical works, one inside of another? When the Grateful Dead played “The Other One” into a jam and back again, as discussed in Chapter 1, did the song survive the transition into improvisation, or did the improvisation interrupt the song? Did any of these musical events actually rise to the status of a musical work?

When Manfred Eicher produced the bestselling album by pianist Keith Jarrett, _The Köln Concert_ (1975), he must have asked himself very similar questions. The concert consisted of two long improvisations of about 30 minutes each and a comparatively short encore. Yet the album consists of four tracks: Part I, Part IIa, Part IIb, and Part IIc. Certainly, the decision to split up the performance was, in part, pragmatic. The second improvisation exceeded the maximum length of a 12-inch vinyl record, and so needed to be divided into Part IIa and Part IIb. But then why would the encore not be labeled as Part III? Or better still, not as a “Part” at all, but as “Memories of Tomorrow,” the song that served as the recognizable basis for that improvisation? Interestingly, the denotation “Part” simultaneously suggests that the encore “belongs” to Part II, in a way that it does not to Part I, but also that the four tracks comprise

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121 See generally: Peter Elsdon, _Keith Jarrett’s The Köln Concert_ (Oxford University Press, 2012), Chapters 5 and 6.
literal parts of a whole, incomplete in isolation. Like the early performances by the New Deal, the nature and status of the musical events in Jarrett’s Köln Concert are unclear.

These examples have in common ambiguous formal markers as a result of the expansive use of improvisation. When presented with such music, how should we regard its temporal dimensions? It is a remarkably basic question, yet one that relies on resolving the ambiguous ontological status of the improvised work. By reexamining the strengths and weaknesses of the existing models, I show that some basis for musical ontology may be found, strangely enough, in the collective intention to improvise.

On the Vocabulary of Musical Ontology

Among the challenges facing musical ontology are the multiple yet non-identical instantiations of songs with the same name. (Recourse to the word “song” is itself an ontological commitment, especially given its broad existing connotation across not only musical genres, but artistic media. Its use here is a practical necessity.) Consider the curious history of “Strobelights and Martinis,” a song by the Disco Biscuits. The track appears only on the 2002 album Bisco Lives II, a now-discontinued collection of short clips from various performances between 1999 and 2002. However, the song does not appear on any of the set lists during that time period. The recording instead comes from a performance of “Mindless Dribble” from September 1, 2001. In the middle of a jam that night, the band happened upon a melodic riff over a

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123 Similar to the New Deal, the Disco Biscuits have a strong fan base that has diligently documented all of the band’s set lists since its inception in 1996. See: www.discobiscuits.net, www.phantasytour.com/bands/bisco, and https://archive.org/details/DiscoBiscuits.
124 A side-by-side comparison of the album version with the recording of “Mindless Dribble” shows that the band used this performance as the source material for the album, although with a few cuts/edits, mostly likely to accommodate the relatively short length of a compact disc.
descending 6-5 sequence that would eventually become the core of “Strobelights.”\textsuperscript{125} The piece appears on set lists finally in 2007, from then on with a contrasting bridge and regularized repetitions of the main theme.\textsuperscript{126} Interestingly, the band also played “Mindless Dribble” in an earlier set that night, perhaps to underscore the autonomy of the new piece. Fan bases confirm that this is the earliest performance of the completed version of “Strobelights.”\textsuperscript{127}

Thus, the name “Strobelights and Martinis” can refer to at least three songs: the early version discovered through the course of performance in 2001 (and technically named “Mindless Dribble”), the edited version of that performance released on the 2002 album, and the version first debuted in 2007. The 2001 version has chronological priority, but would suggest that “Strobelights” is little more than a four-chord vamp, identified above all else by the particular texture of the synthesizer part. The 2007 version, on the other hand, has only ever occurred live, but has some of the markers of compositional design in popular music, such as repeating-verse form and eight- or sixteen-bar repetitions of the main themes. The number of versions increases dramatically if one includes the sixty or so performances following the strange 2007 debut, each featuring a unique jam and other subtle improvisatory flourishes.\textsuperscript{128}

The prevailing view in popular music studies resolves the ambiguous primacy of multiple versions of a work by taking the studio album as the fundamental musical text—a choice with puzzling implications for “Strobelights and Martinis.” In the first place, the band never actually performed it as it appears on the album, much less in the controlled environment of a studio. Instead, the source material was edited down from a twelve-minute jam to fit a five-minute track.

\textsuperscript{125} A recording is available at: The Disco Biscuits, \textit{Live at Wetlands Preserve on 2001-09-01}, Internet Archive, \url{https://archive.org/details/db2001-09-01.shnf}, track 8, ca. 5:00.

\textsuperscript{126} A recording is available at: The Disco Biscuits, \textit{Live at Starland Ballroom on 2007-02-16}, Internet Archive, \url{https://archive.org/details/db2007-02-16.b2-pro.c02.flac16}.


\textsuperscript{128} At the time of this writing, the band has played the song a total of 69 times.
Moreover, the album version only loosely identifies with future performances, such that it refers to a song that was neither played before nor ever played again.

The role of the musical studio as the superlative locus for music-making certainly helped vault the studio album to a central position in popular music ontology. In his book *Rhythm and Noise*, Theodore Gracyk acknowledges this correlation when he distinguishes “rock music” from “rock ‘n’ roll music” solely on the basis of its relationship to studio recording technology:

In short, rock is popular music of the second half of the twentieth century which is essentially dependent on recording technology for its inception and dissemination. Its major *musical* developments have almost always occurred in recording studios, as in the cases of Presley, Dylan, and the Beatles.\(^{129}\)

Gracyk uses the well-documented reliance of rock music on recording technology to found a theory of aesthetics, thus promoting a correlation to a causative principle. In other words, Gracyk seems to argue that the studio origins of rock are primary drivers in the aesthetics of rock.

Clearly, genre identity is no mere matter of categorization; it can serve as a framework for analysis, effectively creating a feedback loop between subjects and objects.\(^{130}\) For example, under Gracyk’s definition of rock music, bands that do not rely on studio recording technology for “inception and dissemination,” like the Grateful Dead, either do not belong to that genre or are, at best, fringe members. Rather than omit the Dead from his aesthetics of rock, however, Gracyk argues, “The Dead are keenly aware of themselves as recording artists when they turn to making records… For all their reputation as a free-flowing live ensemble, the group often adopts

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\(^{130}\) See: Chapter 3, “Some Preliminary Theoretical Obstructions.”
a calculated conception of music in the studio.”

Hence, prioritizing the studio recording within a conceptualization of genre endangers the relevance of musical practices outside the studio, and by extension, the ontological status of improvisation.

The privileged status of the studio album in this ontological paradigm not only implicates genre labels, like rock, but also aligns composition with artwork and improvisation with performance or instance. Andrew Kania’s view allows live performance the status of being ontologically thin musical songs—not works, yet maintains a similar hierarchy between the studio album and the live performance: “In short, live rock practice is dependent on recorded rock, but not the other way around… [L]ive rock performances, while undeniably an important part of the rock world, are not the primary focus of critical attention in that tradition.” Kania’s position relies on a strict causal ordering of recording and performance: first comes the artwork, carefully constructed and perfected in the slower-paced context of the recording studio, and then comes the performance of it, subject to the momentary whims and circumstances attached to live concerts. “Strobelights,” while not unusual within the jam-band genre but certainly anomalous in its production from jam to studio-edited live recording and back again, does not fit this paradigm.

A particularly revealing impetus for Kania’s position is his observation that “the most salient feature of what goes on in the studio can never be exported to the stage. In the studio, one can take one’s time to pick and choose which of the sounds that get on tape should go into the

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131 Gracyk, *Rhythm and Noise*, 82.
132 Moreover, improvisatory ensembles like the Grateful Dead have a home outside of the recording studio: the online library. Websites like www.archive.org host thousands of recordings that bypass the traditional channel of studio recording and commercial label. The premise that ensembles depend on studios for “inception and dissemination” does not hold in the online era.
133 The term, which belongs to Stephen Davies, refers to works that “determine less of the fine detail of their performances than do thicker ones.” Stephen Davies, *Musical Works and Performances: A Philosophical Exploration* (Clarendon Press, 2001), 3. It is scrutinized later in this chapter.
The claim is reminiscent of the increasingly fraught assumptions undergirding the difference between composition and improvisation, which theorist Steve Larson calls the “traditional distinction:”

Composition is traditionally regarded as a process in which a composer, with pen and paper, outside of “real time,” uses revision and hard work to eliminate or avoid mistakes… Improvisation is traditionally regarded as a process in which performers, with their voices or instruments, in “real time,” use luck or skill to respond to or incorporate mistakes…

However, as Mark Butler writes, “…the technological mediation that characterizes contemporary musical performance leads to relationships between processes [such as improvisation] and products [such as compositions] that are dialectical rather than dichotomous.” The traditional distinction, less and less stable, reflects the intuitive idea that chronological priority means ontological priority. Musical practices that regard performative processes as products turn this intuition on its head because they unify composition, improvisation, and performance into a single event.

The incompatibilities between studio and stage that Kania cites do not clearly substantiate a preference for the studio recording as text. First, the practices attached to these two venues frequently overlap. Live performance can feature parts of recordings, through sampling and playing pre-recorded parts, as exemplified by the improvisatory performances of DJs such as Jeff

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135 Ibid., 403.
137 Mark Butler, Playing with Something that Runs (Oxford University Press, 2014), 4.
Mills or DMC champions.\textsuperscript{138} It can also supplant elements of the recording process, as in the case of “Strobelights and Martinis,” in which the stage functioned as the workshop for ironing out the form of a future studio recording. Moreover, the existence of aspects of the recording process that cannot be exported into performance does not explain why the two modes of music-making would have a dependent relationship. By the same token, while some aspects of live performance, such as spontaneous audience reactions, cannot be exported into the studio, this fact does not imply an opposite causal relationship. Likely, Kania means to articulate that the relationship between studio recording and live performance is analogous to that between classical score and classical performance, where our intuitions have guided us to the conclusion that the notated text occupies one, if not the central position in musical ontology.\textsuperscript{139}

Likelier still, Kania and Gracyk have a special interest in sequestering musical improvisation under the rubric of live performance. As the parent category to improvisation, “live performance” describes the circumstances of that particular mode of music making: improvisation is indeed a live event. Yet as the counterpart to the studio recording within a conversation about musical ontology, “live performance” strongly implies \textit{instantiation}, as if live performance and live \textit{version} were interchangeable. As Butler rightly points out, “[P]erformances that do not imitate recordings are still, quite frequently, construed in relation to them. Performances that are marked as especially ‘live’—such as the improvisational ‘jams’ of the Grateful Dead, for instance—are defined as such in opposition to recording.”\textsuperscript{140} In Butler’s view, construing live performance in relation to studio recordings and then contextualizing improvisation within live performance casts improvisation in relation to studio compositions.

\textsuperscript{140} Butler, \textit{Playing with Something That Runs}, 39.
The music discussed in this dissertation clearly does not fit that paradigm of improvisation as the live version of a studio composition. Bands like the Disco Biscuits and Medeski, Martin & Wood measure the success of their live performances on the basis of novelty and spontaneity; reproducing the studio album—if it even exists—is out of the question. But more pressingly, collective improvisation complicates seemingly straightforward questions, such as where does the song (for lack of a better word) start and stop?

The addition of improvisation to the songs in jam-band music blurs the frontiers of their beginnings and endings, highlighting the conceptual closeness of musical form to musical ontology. Consider two common performance practices: in the first, a band plays most of one song, jams at length, and uses a cueing system to transition into the end of that same song; in the second, a band plays all or most of one song, jams at length, and then uses a cueing system to transition into the beginning of a second song. The first format tests the ontological integrity of a single composition. Either the injection of a long, unrelated, and unique improvisatory section creates a temporal severance between the two halves of the song, or “song” is a concept in jam-band music that can tolerate that kind of variance. Both theoretical stances have some intuitive appeal, but both create problems for the second practice. If the jam in the second format is an autonomous musical event, then some rationale is needed to explain how and when the first song yielded to it and the second song emerged from it. Alternatively, if the jam is “part” of the composition then some rationale is needed to explain how and when the first song yielded to the second without an intervening medium.

Clearly, recourse to the studio album is unhelpful and perhaps inappropriate here. It founds the conversation of musical ontology on a bias for studio recordings, and all but guarantees a secondary status for improvisation. Most importantly, it fails to reflect the
importance of novelty and spontaneity in improvisational practice. The relevance of artistic practice to artistic ontology, an idea that philosopher David Davies coined “the pragmatic constraint,” has gained traction in the last twenty years. Briefly, the pragmatic constraint requires that an ontology of art be, minimally, relevant to the sorts of properties and assumptions that we rightly ascribe to works of art. As Davies writes, “to offer an ‘ontology of art’ not subject to the pragmatic constraint would be to change the subject, rather than answer the questions that motivate philosophical aesthetics.”\(^{141}\) In other words, if the ontology of music is to be relevant to the practice of music, then the latter should hold the former accountable.

Musical practices, however, are as diverse as music itself. The pragmatic constraint, contrary to its name, unleashes an overwhelming glut of information upon the researcher. This is because the ontological inquiry does not offer an obvious, rational basis to identify which practices (if not all) are relevant. The full repercussions of this observation can be felt throughout recent studies of musical ontology. It is one impetus behind the “historical” approach, a viewpoint that Lydia Goehr has championed:

\[T\]he limitations of analysis stem from a pervasive belief (not always explicitly acknowledged) that one can arrive at an adequate philosophical understanding of what musical works are, without necessarily appealing to knowledge of how the work-concept has actually functioned \textit{in practice}.\(^{142}\)

\(^{141}\) David Davies, \textit{Art as Performance} (Blackwell, 2004), 18-21.
The historical approach, which describes “the way the concept of a work emerged in classical music practice and how it has functioned,” as opposed to what “kind of object a work is,” solves the problem of discerning relevant musical practice by focusing on historical aesthetic concepts. For Goehr, this is the formulation and disintegration of the “work-concept,” a regulative concept of musical practice, chronologically and geographically constrained to 19th-century Europe. Briefly, the work-concept holds that musical works exist and transcend performances of themselves. But this solution comes at a cost: 19th-century Europe is a narrow subset of the entirety of music history and practice. Moreover, it assumes some level of coordination between musical practice and musical tokens, which cannot be taken for granted. The historical approach does not do away with the problem of how to interpret what music is or which music to talk about; it reflects an upstream principle that biases concepts over objects.

This bias has led other scholars to embrace a pluralistic approach to musical ontology. Mark Butler, whose work on electronic dance music encounters many of the same issues as the present work on collective improvisation and jam-band music, has described scholars who adopt the pluralistic approach:

They accordingly seek to identity many ‘work-concepts’ instead of a single dominant ‘work-concept.’ These scholars have also sought to theorize the role of modern media practices such as recording in relation to the abstractions about music identity that

\[\text{143 Ibid., 4. Original italics.}\]
\[\text{144 Ibid., 109-111.}\]
humans use, and they have been concerned with how works change and interrelate over time as well.\textsuperscript{146}

The pluralistic approach acknowledges the implicit genre-centrism of the ontology question, and responds by merging the logical methodology epitomized by Goodman and Levinson with the historical relativism of Goehr and others. Regarding ontology as a complex, as Butler does, offers a multi-dimensional, catch-all approach to ontology that embraces the pragmatic constraint. But it comes at the cost of internal coherence. In a well-known article on musical mediation, Georgina Born has acknowledged the potential for contradiction within this approach:

\begin{quote}
The work ideal is therefore experienced as unchanging: it exists and supervises history. Yet paradoxically, it invites historicism and an obsession with authenticity, a historicism that music’s commodification and recording have only intensified. The work ontology sits uneasily, then, with the dynamics analyzed by Gell.\textsuperscript{147}
\end{quote}

Identifying multiple work-concepts makes the pluralistic approach flexible, but does not clarify how to regulate the priority of those concepts relative to each other. Absent some kind of independent framework, relative values remain indeterminate.\textsuperscript{148}

Thus, the conversation on musical ontology arrives at a familiar paradox: the musical work-concept is both ontologically prior to musical works and yet dependent on potentially \textit{ad hoc} subjective interpretations by the analyst, which are themselves informed by musical works.


\textsuperscript{147} Born, “On Musical Mediation,” 27.


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It is a problem as ancient as Platonism, and has been nicknamed “the qua problem.” Briefly, the qua problem is a reference problem. In the endeavor to explain the ontology of music, the qua problem manifests itself as a conceptual bottleneck at which point the analyst is obliged to intervene and define the object of inquiry—the musical work. In the case of Goehr’s historicist account, this is the 18th-century work concept; for Theodore Gracyk, this is the 20th-century studio album; and so on. More broadly, the qua problem highlights the ambiguous primacy between object and kind (or, in the parlance of musical ontology, tokens and types). As Amie Thomasson has clarified: “[W]ithout specifying the sort of kind to be picked out, we cannot unambiguously ground reference to any kind.” The analyst lacks an impartial basis upon which to set the terms of the investigation and is drawn to alternative solutions. Thus, the qua problem seems to obstruct the inquiry into ontological status at two levels: at the methodological level of interpreting the body of musical practice, and at the conceptual level of the Platonist answer to musical ontology itself.

A common response to the qua problem is to appeal to our intuitions about music. Indeed, most if not all major works on the subject of musical ontology have to grapple with the relevance of our intuitions at some point. The rationale for this train of thought is clear enough—surely our most commonly held intuitions about music are preferable to the kinds of autonomous decisions analysts would have to make to proceed otherwise. The issue is that resorting to shared intuitions does not avoid the qua problem; it simply deflects it to alternative interpretive demands concerning what those shared intuitions actually are. Consider, as other philosophers


have pointed out, the stalemate that results when “common” intuitions point toward mutually exclusive conclusions.\textsuperscript{151} The contradictions that arise from our intuitions regarding the different performance practices of jam-band music are a case in point.

Given these constraints, an investigation into the ontological status of music necessarily entails discharging the \textit{qua} problem at some point in the inquiry. For collective improvisation, a category of music otherwise on the fringe of the ontology debate, this leaves two courses of action: to wipe the slate clean and start from a collective improvisation-centric perspective; or to reconcile collective improvisation with the music(s) more commonly included in the ontology debate. The existing models ultimately prove inappropriate or insufficient, as the challenges attached to collective improvisation surpass those attached even to popular music.

One approach to popular music and improvisation in general has been to qualify an ontological status as either “thick” or “thin:

\begin{quote}
Works for live performance differ considerably in the specificity of their essential details. Pieces consisting of abstract structures of note types [referring to the categories of “notes” or pitches] are \textit{ontologically thinner} than those specified at the level of note tokens [referring to specific, played instantiations of those notes or pitches]. Thinner works determine less of the fine detail of their performances than do thicker ones, but performances are always thicker than the works they are of.\textsuperscript{152}
\end{quote}

Ontological thickness and thinness are measures of the control that works maintain over performances, via the specificity of instructions passed from composers to performers. For

\textsuperscript{151} See, for example: Stecker, \textit{Methodological Questions}, 375-8.
\textsuperscript{152} Davies, \textit{Musical Works and Performances}, 3. Italics mine.
example, Beethoven’s C major Symphony is ontologically thicker than Terry Riley’s *In C* because Beethoven’s score includes details for performance that Riley’s score leaves to the discretion of the performer, such as the duration and volume of individual notes. Ontological thinness implies that the performer has more latitude for discretion.

The qualifiers of “thick” and “thin” address an intuitive principle in performance studies: the elements of a song that remain constant from one performance to the other must occupy a more central position in the identity of that song than other elements. Yet for a variety of reasons, this approach does not solve the ontological issues facing collective improvisation. It assumes that some musical elements will return across performances, and that return implies musical importance. Yet by its very nature, collective improvisation highlights novelty and spontaneity as premium values. Jam-band music, for example, places temporal and dramatic weight on the elements that do not return. Correlating constancy with importance reverses the priorities of collective improvisation.

“Thickness” and “thinness” address an important quality of “works for live performance,” namely, the variance that the open work can sustain without compromising its integrity, nominal or otherwise. Of course, in order for an ontology of music to be sensitive to both works for live performance and the alternative (whatever that is), the ontology should be sensitive to the gradations of openness that works can have. However, the opposition between thickness and thinness relies on an opposition between essential and nonessential. As to the meaning of “essential,” Davies is unclear. He initially defines the essential properties as “properties displayed by any and all . . . instances,” but later rejects the term altogether in favor

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of “constitutive properties.”

As to “constitutive,” Davies remains unclear: “I can offer no fancy philosophical analysis of the distinction between constitutive and essential work properties and their respective relations to work identity.”

Yet for the claim that ontology comes in thicknesses, defining “essential” is essential. The essential implies the nonessential, and the nonessential is the province of sustainable variation—in other words, the fat that can be cut from an ontologically thin work. And for the purpose of the present discussion, distinguishing essential from nonessential may be a crucial component of regarding the temporal dimensions of collective improvisation.

The reference to musical detail suggests that Davies has stronger intuitions regarding the distinction between essential and nonessential than he lets on. The invocation of detail may be a casual one that aids in the presentation of this distinction, but it strongly implies that the musically nonessential is aligned with detail and the musically essential with the opposite of detail—presumably formal structures or processes, the removal of which would render the piece unrecognizable or incomprehensible. But what musical features do not qualify as detail? When Davies cites the differing levels of specificity with which thick and thin musical works prescribe detail, he neglects to clarify just which features are details. Instead, Davies proposes what he calls “ontological contextualism:” the idea that “relations between a piece’s raw musical content and the socio-musical setting in which it is created generate features vital to its identity.”

Davies qualifies thickness and thinness based on the essential and the nonessential, and moors the essential and nonessential to the socio-musical context. As a result of the transitive properties from socio-musical context to essential properties to ontological thickness, the internal coherence of an ontological status extends only as far as the socio-musical context. Thus, ontological

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154 Ibid., 45–47.
155 Ibid., 47.
156 Ibid., 45.
contextualism, a cousin of Goehr’s historical relativism, similarly delays the *qua* problem by deflecting it from an object to a concept: the socio-musical context.

Consider the example of the classical cadenza, a musical device that Davies spends some time discussing.\(^{157}\) The cadenza, like most cueing systems, sets limits on the improvisational range of the musical event such as to fit the structure and convention of the host piece.\(^{158}\) It is a musical event thinly coded into a physical, musical score through the idiomatic use of a rest with a fermata prior to the ultimate *tutti* of a concerto movement or aria.\(^{159}\) And prior to the increasingly widespread reliance on composed and rehearsed cadenzas after Beethoven, the cadenza would feature extensive improvisation. Thus, the cadenza is an early classical example of a musical event that can cut across the basic musical binary of composition and improvisation. It is at once both scored, in the sense that a musical notation triggers it, and unscored in that its exact pitch content is left undetermined. As such, the cadenza antagonizes conflicting intuitions as to whether or not it is essential to a work’s identity. If the notated score is a set of work-determinative instructions designed by a composer to direct future executions, then a performer must play a cadenza in order to comply with those instructions. Alternatively, if the score calls for a cadenza but does not dictate the exact content of that event, then the score effectively calls for the performer to add to the notated content of the score. At the foundation of this impasse is a confrontation between strict score compliance and informed score compliance, the priority of which our intuitions are unable to conclusively resolve.\(^{160}\) Of course, even without the cadenza, multiple performances of the same musical piece differ from each other—this is a central

\(^{157}\) See especially: Ibid., 18, 99-150.
\(^{158}\) For discussion regarding the cadenza as cueing system, see: Chapter 1, 28.
impetus for the inquiry into musical ontology. However, performances of pieces featuring a
cadenza not only differ from each other (as all performances of scored works do), but they even
destabilize their compliance with the score as a result of the liberties taken with pitch content.
Pieces featuring a cadenza expose the wide-ranging potential variance within score-compliant
performances.

As to whether or not the cadenza is musically essential or nonessential, the evidence is
split. From a formalist point of view, the cadenza is a harmonic afterthought: an open and
arbitrary parenthesis with no bearing on the fundamental structural processes of sonata form.  
Yet also from a formalist point of view, the end of a cadenza recalls the defining trill-cadence of
the essential structural close, perhaps implying a deferral of this event. At the same time,
embracing the view that performances of a work must be pitch-perfect reconstructions of the
notated score either forecloses the option of an improvised cadence or prioritizes strict score
compliance over informed score compliance. Both of these options are problematic. The former
imperils historical performance, in which the improvised cadenza would be expected. The latter
encroaches upon the specificity of the performative instructions passed from composer to
performer, undercutting, at least in theory, the agency of the composer. Thus, the addition of
improvisation, even within the circumscribed context of a cadenza, forces a confrontation
between the letter of the law and the spirit of the law.

161 James A. Hepokoski and Warren Darcy, *Elements of Sonata Theory: Norms, Types, and Deformations in the*
162 Ibid., 603.
The Specter of Authorial Intention

The authority of the score (and related ontological priorities, like score compliance) extends from the authority of the composer. As Davies explains, scores transmit instructions from the composer to the performer; in order for a performance of a work to capture the determinative features of that work, the performer must comply with those instructions. Scores and performances have a complementary relationship in this paradigm, as the score indicates a composer’s intentions for future iterations of the work, and performances fulfill those intentions.

However, authorial intention in music and in art more broadly has remained a fraught concept since Monroe Beardsley’s groundbreaking 1946 article, “The Intentional Fallacy,” in which the authors argued that “the design or intention of the author is neither available nor desirable as a standard for judging the success of a work of literary art.” Beardsley’s article addresses “judging” works of literary art, which hinges (in part) on the semantic meaning of the text. Similarly, the present-day anxiety over discussing authorial intention arises when discussing the author’s intentions for the semantic meaning of the text (which Beardsley circuitously defines as “what [the poet] intended in a formula”). While this view has waned as philosophers of aesthetics have come to recognize the importance of cultural contextualism, it maintains a presence in contemporary thought.

Yet Beardsley’s cautionary thesis does not extend to authorial intentions beyond the semantic meaning of the text. As the author himself remarks: “A poem does not come into

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existence by accident. The words of a poem…come out of a head, not out of hat. Yet to insist on
the designing intellect as the cause of a poem is not to grant the design or intention as a
standard. Thus, Beardsley quickly dispatches a different kind of authorial intention: the
intention to “cause” a poem, or to bring a poem “into existence.” Interestingly, Beardsley avoids
the word “compose” here, as if presaging the ontological commitments that word would entail.

Unlikely Beardsley, musicologists concern themselves with the “cause” or “bringing into
existence” of musical works all the time—most often in the context of attribution studies. The
attention paid to attribution across virtually all eras and genres of music speaks to the high
premium that musicologists place on it. Attribution is no less important to ontology, though
scholars rarely acknowledge that fact explicitly; attribution of allographic art seems to occupy
the distant fringes of the ontological debate. In the literature on musical ontology, the issue of
intention refers more frequently to the intentions of the performer. Kania, for example, argues
that an “intentional relation” is necessary for a performance to instance a composition, such that
the performer actually intends to perform the work that he/she performs.

In musical ontology, the importance of the intention to bring music into existence is
implicit. Even realists—who hold that works of art are discovered, not created—eventually have
to address the role of human agents. Yet the conversation on the ontological status of collective
improvisation requires a more explicit account of authorial intention because authorial intention
cannot be taken for granted there.

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167 Ibid., 469. Original italics.
168 Allographic art is art that can be reproduced without compromising the integrity of the author, such as much
composed music, as opposed to art that cannot be reproduced, such as paintings or signatures.
169 Andrew Kania, “New Waves in Musical Ontology,” in New Waves in Aesthetics (2008), 20-40. Interestingly, this
common insight is similar to Beardsley’s claim that the real source of semantic meaning in poetry is in the response
of the speaker (reader), not in the intentions of the poet. See: Beardsley, “The Intentional Fallacy,” 470.
First, musicians may dispute the assertion that group improvisation cannot come into existence by accident. Indeed, as elaborated on in chapter one, whether or not an ensemble can share the intention to “cause” music at all is unclear. Second, even if ensembles shared that intention, whether or not the ensemble “causes” the sum musical output is also unclear.

However, unraveling these questions of collective intentionality is the key to understanding, at least in part, the ontological status of the improvised work for several reasons. First, the intention to bring music into existence is an obvious requisite within musical ontology. This is a rarity in musicology: a point of agreement across virtually every existing theory. Second, by relying on my work on cueing systems, the intention to create music is actually observable in the unusual context of collective improvisation. And finally, as I intend to argue, the intention to create music may be both sufficient and necessary to answering the questions motivating this chapter.

Musical Ontology and Collective Intentionality

Group performance of composed works, that is, works that have been designed and finalized outside the real time of live performance, demonstrates a level of collectivity that collective improvisation can only aspire to. The ensemble meets a rigorous standard of intentionality. Not only do members share a vision for the immediate future down to a very detailed level, but they also act to realize that vision to an exacting degree. Throughout collective improvisation, alternatively, the ensemble fluctuates between varying levels of shared intentionality. At times the sense of collectivity can vanish altogether, such as when the

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170 See, for example: Chapter 3, “Some Preliminary Theoretical Obstructions,” and “Between the Extremes,” interviews with John Medeski.
overall musical product seems to threaten to dissolve into chaos. At other times the level can be quite high—these are the magical moments in which the freedom of improvisation collides with the demands of group agency, and a cueing system is deployed. Collectivity is a marker of that baseline consideration in musical ontology, intention. Thus, when collectivity waxes, the music becomes the product of a robust intention in a way that is similar to the composition of musical works.

One issue stands in the way of actually building an argument on this observation: it may only be possible to gauge the collectivity/intentionality of live performance in relation to other examples of live performance. This is a potential problem because without discrete intervals of collectivity, there can be no threshold point at which the improvised work meets the status of conventional works. However, the issue is avoidable. The premise offered here is not that collectivity correlates to gradations of ontological thickness, but that collectivity is a marker of intentionality, opening the door to ontological status of any kind. Thus, a threshold point is neither possible nor desirable.\footnote{Gradations of collectivity may imply gradations of work-ness, but this is a premise beyond the scope of this chapter. First, if gradations of collectivity are impossible to measure (and in the hectic midst of performance, they may be), then the premise is theoretically valid but analytically impractical. Second, the only theory of musical ontology tolerable of gradations belongs to Davies’ conception of ontological thickness and thinness, which I have shown to be problematic for improvised music.}

The payoff of this premise is the ability to identify seams within uninterrupted jams that imply the beginnings and endings of formal works. The point is modest, but has rippling consequences. First, it reorients the attention to formal seams away from the dramatic transitions that occur at cueing systems to the periods of pause when the ensemble is less coordinated. As a result, the compositional bookends can be interpreted to reach beyond their strictest temporal bounds into the moments immediately before and afterward. Second, it clarifies and provides a theoretical underpinning to the notion of continuity in improvised music. In the literature on jazz
and improvisation more broadly, discussions of continuity seem to rely on a colloquial understanding of the word. As a result, “continuity” has a plurality of meanings, at times even within the same text. Paul Berliner, for example, is especially free in his use of the word in his discussion of John Coltrane’s improvisational style: “Coltrane also establishes continuity at times by beginning and ending a phrase with the same pitch, then repeating it to initiate the following phrase.”172 Understanding continuity as a measure of collectivity grounds the discussion in a more clearly formulated and observable musical quality. Further, it accords with the theory set forth in Chapter 3 that pulse is a baseline requirement for formal subsections. Collectivity relies on a shared sense of pulse, and so too does continuity.

Another immediate obstacle to applying this theory about the importance of collectivity to musical ontology is the ambiguous relationship between collective intention and musical output. Collectivity can be seen to wax in the time periods from just before to just after cueing systems. So, it stands to reason that these periods share a common intention and thus cohere as a continuous musical event. But as these periods constitute only a small amount of live performance time, questions remain as to how to apply this theory more broadly.

One question is whether uninterrupted collectivity necessarily means one continuous musical event. These are situations, such as the December 27, 2002 performance from a jam into “Rock Candy” by the Disco Biscuits, in which the ensemble seamlessly and collectively connects a jam to a song.173 In that case, the transition from the beginning of the jam into the second song featured (arguably, at least) no loss in collectivity: mode changes were relatively synchronized and thematic development was relatively coordinated. The absence of

172 Paul Berliner, Thinking in Jazz: The Infinite Art of Improvisation, (Univ. of Chicago Press, 1994), 589. Here he suggests that continuity is a matter of pitch identity. Cf. Berliner, Thinking in Jazz, 90, 197, 202, 264, where continuity assumes thematic, rhythmic, and even rhetorical dimensions.

173 For discussion, see Chapter 3. For the transcription, see Appendix 1.
discontinuities could imply that the performance from the beginning of the jam through the second song consisted of only one musical event. Several aspects of the performance complicate this interpretation. First, the temporal dimensions of the jam are out of proportion with those of the song. Unlike a musical parenthesis, the jam and the song seem to be on equal rhetorical footing. Second, perhaps due to the priority of notated musical practices in traditional arguments of ontology, only part of the performance includes a titled song. Not only do musical titles suggest concrete and independent intentions, but there is no way to refer to the musical event between them without some reference to the titled bookends.

The problem with conceiving of the December 27 performance into “Rock Candy” as a single musical work is that the band’s intentions, while continuous, were plural. They had the intention to play “Reactor,” then to jam, and then to play “Rock Candy.” The cueing system marking the end of the jam and the beginning of “Rock Candy” maintains an unbroken collective effort, but also marks the boundaries between different intentions. This is the heart of the issue: collectivity can survive changes of intentions. In order to complete the argument then, a judgment has to be made regarding the specificity of the intention required to qualify as a collective one.

Considered on its abstract, theoretical merits alone, this may be an ad hoc judgment to make. Intentions are unmeasurable. Yet the argument even in this incomplete form may constitute a sufficient basis for musical ontology. First, as this dissertation has shown, not only can musicians hold different specific intentions (i.e. subplans) while collaborating, but musicians can shift their specific intentions while holding a broader one intact. Second, by opening channels of communication among players, cueing systems bring future events into sharper

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174 For an example of shifting subplans while a broader objective remains intact, see analysis of the Grateful Dead, “Weather Report Suite,” in Chapter 3, “Two Extremes of Large-Scale Improvised Form.” For discussion of “subplans,” see Chapter 1, “Demystifying Group Agency.”
focus. In this sense, different intentions can overlap. Third, the actual performance practices of collective improvisation favor this line of argumentation. Work titles, if provided at all, are provisional; the compositional process is largely a live event; and collectivity is a virtual necessity of beginnings, transitions, and endings of any kind. Thus, a theory of ontology based on collectivity can distinguish potential, though not definite, formal boundaries.

The questions motivating this chapter are now partially answerable. First, collective improvisation may approach the ontological status of a self-contained musical work provided the ensemble functions collectively. In other words, improvisations can disrupt the structural integrity of a song when the seams connecting them experience a loss of collectivity. These moments sever the musical output from any kind of group intention and are authored by chance. Second, this mode of performance consists of at least two (but never one) musical works. The seam between “composition” and “improvisation,” if we take that to mean the seam between planned or rehearsed material and unplanned or unrehearsed material, necessarily entails a loss of collectivity. This is because future intentions are yet unformed at the onset of that seam (otherwise, the “improvisation” is not that improvised at all). Of course, oppositely, the performance that proceeds from “improvisation” to “composition” may not entail a loss of continuity. Finally, we should consider the temporal bounds of musical events in terms of collectivity. As this chapter has shown, collectivity—not rehearsability, as the legacy of primarily scored works has burdened upon the contemporary conversation on ontology—is the most reliable marker of the musical work. By reifying those spans of musical time in which an ensemble, by skill or by chance or by cueing system, cohere as if with one mind, we conceptualize the musical work on its own terms: social, constructed, and magical.

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175 This claim identifies a gateway requirement that must be met in order to pursue a larger inquiry into the nature of musical ontology. As to that nature, the claim is agnostic. However, the preceding review of the major accounts of ontology would suggest that a workable theory for collective improvisation has yet to be articulated.
CONCLUSION

Synthesizing Analysis and Ethnography

This dissertation, building on others’ scholarly work, has sought to dissolve the artificial distinction between composition and improvisation. Yet a holdout of the old mentality persists: unlike the analysis of composed music, the analysis of improvised music seems continually subject to a greater degree of skepticism. For example, Steve Larson has identified the assumption that the “sophisticated relationships prized by analysts” are products of composition, not improvisation.176 Similarly, Garrett Michaelson has recognized the urgency, for some theorists, that improvisers “intentionally produce the relationships discovered by [analysis].”177 This skepticism suggests that improvisation lacks the kind of parity between the nature of analysis and the nature of composition that would render the analysis of improvisation meaningful.178 However, as I have attempted to show in this dissertation, collective improvisation problematizes all of these assumptions. Artist interviews depict collective improvisation as accidental, chaotic, and mystical. Musical analyses, alternately, reveal implicit processes that are intentional, designed, and routinized. The tandem use of analysis and ethnography expose a striking asymmetry between musicians’ accounts of the music and the processes observably at work in the music—one otherwise missed in the absence of analysis.

Thus, the curious case of collective improvisation destabilizes the usual sources of skepticism and reinforces the importance of analysis as a component of musical investigation.

One critique of the analysis of improvisation stems from the concern that the import of analytical methods from their classical origins might introduce unforeseen biases that do not surface in their native contexts. Even as routine a task as identifying a dominant chord can invite complications, particularly in music that relies on the non-idiomatic use of dominant-functioning chords. Indeed, much of this dissertation have had to address, in one form or another, the “intuitive thinking” that obstructs the analysis of collective improvisation. In the chapter on the form of improvised music, for example, I have taken care to strip common-sense formal markers like repetition of their default status, and instead rebuild these markers around the processes of improvisation. Similar, in the use of the term hypermeter, I have maintained the core definition of “a metric level greater than the notated measure bearing the internal qualities of the measure,” yet allowed for “salience” to bear on the upbeat or downbeat status of individual pulses. By acknowledging and accounting for the divergences between classical and popular idioms, common theoretical concepts can remain relevant across disparate genres.

Perhaps the main critique stems from the conventional wisdom regarding the disparate intentional status of improvisation as compared to that of composition. As Bruno Nettl succinctly writes:

For composition, we believe that all components are equally and definitely intended by the composers to be as presented… In improvisation, one must face the likelihood that some of the material may be precisely intended while other passages are thrown in without specific thought, possibly to permit the performer to think of “what to do next…”

179 See: Chapter 1.
[W]hile one may analyze a transcription of an improvisation virtually as if it were a sonata or a rhapsody by Brahms, in an improvisation the relative significance of the various components would be harder to establish.\textsuperscript{180}

By concluding that the varying levels of intentionality within improvisation would result in the varying levels of significance, Nettl implies that, within a traditional view of composition, intentionality and significance share a positive correlation. While he does not explain the rationale for this assumption, the argument does evoke the tempting explanation anticipated thirty years earlier by Edward T. Cone: “Expressive values in any art—if they exist at all—depend on concrete values” and “concrete musical values depend on absolute decisions [on the part of the composer].”\textsuperscript{181} In other words, the discovery of musical expression through analysis relies upon the composer having made decisions and acted upon them. If we accept the premise that improvisers’ decisions range from “precisely intended” to “without specific thought,” then we face the problematic conclusion that the expressive values of improvisation may be immune to analysis.

Making decisions and acting upon them is, of course, a form of agency. Thus, Cone hints that the trenchancy of analysis depends on the agency of the author. However, collective improvisation complicates the issue of authorial agency. On one hand, it features cooperative events that are virtually indistinguishable from group agency while allowing individual musicians to pursue their own independent agendas. As Nettl implies, decisions range in terms of

\textsuperscript{180} Nettl and Russell, \textit{In the Course of Performance}, 13. Here Nettl summarizes, but does not endorse, a traditional view of improvisation versus composition. Nettl’s own view is that improvisation can certainly sustain description and analysis.

their intentionality, with some “decisions” made “without specific thought, possibly to permit the performer to think of what to do next.” In this sense, collective improvisation is ripe for analysis. On the other hand, it also has a mystical dimension, as various artists have attested, in that the music seems to have a life of its own. In that sense, the analysis is highly suspect. Collective improvisation confronts the scholar with an epistemic problem, in that various analytical statements (such as, “the Grateful Dead negotiate such and such transition using a motivic cueing system”) enjoy a certain level of evidential justification and may in fact be true, yet lack corroborative support from musicians. While musicians may understandably find technical explanations alienating, it is nonetheless noteworthy that they speak in terms of the music itself having its own agency—that it has a life of its own (Medeski) or it just happens (Miller).

Contrary to Cone’s expectation, analysis and agency seem to have a reciprocal relationship in collective improvisation. Analysis reveals harmonic and metric events highly suggestive of agency, which in turn motivate greater analytical scrutiny. Analysis certainly does not resolve the issue of intentionality; in fact, it draws attention to just how problematic that issue can become. Yet the asymmetry between analysis and artist interviews for this dissertation captures what Derek Bailey calls “something central to the spirit of voluntary improvisation which is opposed to the aims and contradicts the idea of documentation,” and is itself a worthy subject of musicological scrutiny—not skepticism.

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Areas for Further Study

Collective improvisation offers a rich arena for theoretical and analytical discourse. It provides a forum for considering a broad and complicated question: how do musicians coordinate their actions when those actions are improvised? In the course of pursuing answers, I have grappled with a variety of other issues, which are ripe for further investigation.

This dissertation has developed and implemented a theoretical framework for analyzing collective improvisation. As previously discussed, much of the extant literature on jam bands emphasizes the mystical aspects of collective improvisation. This mystification discourages a mode of analysis that offers explanatory accounts of the music. In a well-known article, Graeme Boone thoroughly analyzes an iconic performance of “Dark Star,” showing how the band resolves melodic and tonal issues in relation to the song’s “expressive goals, particularly in connection with the lyrics.” Yet this analysis overlooks the extent to which the demands of collective improvisation can shape exactly these kinds of issues. In order to realize a cueing system, for example, the resolution of certain tonal and metric ambiguities is simply necessary. Moreover, jam bands like the Dead are unlikely to construct their improvisations in obedience to the lyrics; compositions serve first and foremost as bookends to improvisation. Similarly, Jnan Ananda Blau offers a descriptive taxonomy of “jam types,” which seem to reflect a surface-level appraisal of how “far” the band diverges from the bookending compositions. Yet these types do not offer any rationale as to how to measure that distance, what the thresholds are between

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184 Jnan Ananda Blau, “The Trick was to Surrender to the Flow”: Phish, the Phish Phenomenon, and Improvisational Performance Across Cultural and Communicative Contexts (PhD diss., Southern Illinois University, 2007), 105-7.
types, how the band enters or leaves them, nor how differing modes of performer interaction could produce those types. They appear to be completely metaphorical.

Of course, collective improvisation relies on musical processes that can sustain explanation. In fact, rereading Boone and Blau with a theory of cueing systems in mind enhances and complements their analyses. For example, recasting the melodic and tonal issues in “Dark Star” as musical puzzles calling for a collective solution constitutes a persuasive narrative of the performance, while obviating the need for lyrical analysis in a style of performance that does not prioritize lyrics. In that context, Boone’s conception of “virtuality,” in addition to articulating the transcendental, “searching” ethos of jam-band music, would also capture the very purpose of cueing systems: to connect the individual intention with the collective output.\footnote{Boone, “Tonal and Expressive Ambiguity,” 202-204.}

Similarly, incorporating Blau’s taxonomy of jam types into my theory of large-scale improvised form would be mutually beneficial. As I argue in Chapter Three, all improvisatory forms belong to a spectrum between the episodic and continuous development models. This dissertation has taken “collective improvisation” at face value; moments that are not collective and improvised represent potential formal seams. Such an approach maintains a conceptual congruity with other understandings of form, even in classical music, by emphasizing seemingly universal baselines: change and difference. The resulting account of form is relativized, internally coherent, and comparable to that of other genres. However, since most actual performances would fall somewhere in the middle, Blau’s jam types might help partition this spectrum into subtypes. A measure of how “far” an ensemble manages to explore outside the composition—properly theorized—would give definition to the middle of the spectrum.

Lastly, further ethnographic work would capitalize more fully on the theoretical framework offered in this dissertation. While some musicians find the systemization and rigidity
of music theory antithetical to the nature of improvisation, artist interviews and participant-
observation would help clarify, perhaps indirectly, some aspects regarding intentionality. For
example, does the incremental process of compatible conditions resonate with the musicians’
perception of improvisatory practice? Moreover, while the questions concerning musical
ontology that define Chapter Four seem not to resonate with collective improvisers, professional
producers and amateur tapers, whose jobs include determining where to cut tracks and how to
label them, would likely have strong opinions. Any information regarding how they make such
decisions would certainly nuance a philosophical account of these ontological questions.

Concluding Thoughts

Throughout this dissertation, the recurring disparity between the analytical conclusion
and the conclusions of artists has recalled a familiar epistemic puzzle known as the “Gettier
Problem.” Briefly, the Gettier problem refers to an unusual situation in which a statement is
wrong, even when the conditions for knowledge (that the statement is true, that the statement is
believed, and that the belief is justified) are all met. Consider an example:

Farmer John keeps a cow, Bessie, in the pasture behind his house. One day, the cow goes
missing, so John calls Jack to help him find her. When Jack arrives, he spots a white and
black kite in the distant corner of the pasture. Mistaking it for Bessie, he tells John that

186 See: Edmund Gettier, “Is True Justified Belief Knowledge?”, *Analysis* 23 (1963), 121-123. See also: D.M.
Armstrong, *Belief, Truth, and Knowledge* (Cambridge: Cambridge University Press, 1973), 152; M. Clark,
“Knowledge and Grounds: A Response to Mr. Gettier’s Paper”, *Analysis* 24 (1963), 46-48; Robert Nozick,
the cow is in the pasture, not lost. John walks out back to look. Bessie, it turns out, had actually been in the pasture all along.

Jack’s statement seems to meet the requirements for knowledge: it happens to be true, Jack believed it was true, and given the circumstances, Jack was justified in that belief. Yet the role that luck plays in this scenario seems to disqualify Jack from holding that piece of knowledge.

Examining collective improvisation could lead to a similar situation. The artists interviewed in this dissertation have expressed the belief that mystical, magical forces, most often in the guise of the music’s “life” or “mind,” are at work during collective improvisation. Furthermore, given the vast empirical evidence that they are able to rely on, that belief may be justified. Alternatively, I have argued that cueing systems are at work during collective improvisation, and I have attempted to justify this belief through the exercise of reason and logic.

Truthfulness, the third requirement for knowledge, is a lingering uncertainty, as is the possible role of luck in both these statements. For the mystical explanation, whether or not the diction is metaphorical remains unclear because artists seem unwilling to interrogate it. As Jerry Garcia says, “we certainly don’t discuss it.”\textsuperscript{187} This apparent unwillingness may reflect the inability of language to capture the experience of collective improvisation. Either way, the detection of “musical agency” resembles Jack’s detection of the white and black “cow:” the interpretation of perceptual processes, the reliability of which is questionable.

Likewise, one of the claims in this dissertation is that cueing systems enable ensembles to manifest group agency while constituent members act independently. This claim seems to suggest an inherent discrepancy between appearance and reality. Due to the external position of

\textsuperscript{187} Bailey, \textit{Improvisation}, 42-43.
the theorist relative to the actual performative practices at work in collective improvisation, perceptual processes could generate information that only happens to be true, as a matter of luck.

These observations support the conclusion that a fuller investment in ethnography, such as by performing alongside a jam band, would help connect the mystical and analytical conclusions. In fact, when I joined a jam band with some college friends, I tested my theory of cueing systems (in its form at the time). Cueing systems work—perhaps too well. The lead guitarist complained that cueing systems were too restrictive of his creative processes. I, too, found a singular focus on cueing systems to undermine the sense of spontaneity throughout improvisation. Yet I also felt that the systems could become passive mechanisms with more practice. An obstacle toward capitalizing on this fuller investment is the amount of time it demands of others; collective improvisation cannot be practiced alone. Instead, it may ask the same of its researchers as of its performers: collaborate.
Appendix 1

Transcription of “Reactor” into “Rock Candy” by The Disco Biscuits
Appendix 2

Partial transcription of “Weather Report Suite” by the Grateful Dead
Gtr1

Gtr2

Bass

Synth

Gtr1

Gtr2

Bass

Synth
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