Voice as Action: Towards a Model for Analyzing the Dynamic Construction of Racialized Voice

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> Shirley Verrett once asked an interviewer:
> "When you hear my sound, would you think it's a black voice?"
> The interviewer replied without hesitation: "No."
> Verrett responds, "That's it. And people told me this a long time ago. So, it mixes me up a little bit."
> (Schmidt – Garre 2000)

Vocal timbre is commonly believed to be an unmanipulable attribute, akin to a sonic fingerprint.[1] Because the voice arises from inside the body, quotidian discourse tends to refer to someone's vocal sounds as inborn, natural, and true expressions of the person. What, then, are we to make of the common notion that a person's race is audible in her voice? While it has been conclusively demonstrated that many of the physiognomic aspects historically employed as evidence of a person's race—including skin color, hair texture, and dialect or accent[2]—actually evidence nothing more than the construction of race according to the ideological values of beholders, vocal timbre continues to elude such deconstruction.[3]

Recent critical thought on the intermingling of the physical senses, including the so–called sensory turn in anthropology, "new materialist" philosophies, and recent advances in science, technology, sound studies, and media studies, underscores the need for scholarship that recognizes the voice and vocal categories as culturally conditioned material entities.[4] Trends such as the metaphorical notion of "having voice"[5] have to some degree obscured the material and multisensory aspects of voice. Conceived within the specific context of musicology and the general context of the humanities, this article seeks to demonstrate how the re–framing of voice implied by sensory and material inquiries redraws the topology of voice. I believe that this exercise may offer a deepened understanding of racial dynamics as they play out in our interactions with voice.

Firstly, I oppose the common metaphor that equates voice with unified subjectivity—an association that "assum[es] myths of constancy, coherence, and universality"[6] (Ira Sadoff, quoted in Wheeler, 2008:37)—and instead examine the voice in its concrete specificity, as an unfolding event articulated through a particular sensing and sensed body. Secondly, I take issue with musical research that has traditionally construed voice as sound (or even

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conflated it with notations in a score), and instead suggest that because voice is always already materially grounded across all points of contact, we might understand it as corporeally enacted throughout all acts of voicing, transduction, and reception.[7] In short, I wish to offer vocal research that centers on the material, sonorous, and sensory voice as it is produced and imagined.

Encouraged by the critical discourse enabled by the aforementioned sensory turn in anthropology, history, and philosophy, I submit four contentions about the ways in which vocal timbre is racially framed, and offer two interventions in the form of analytical models. The first two contentions address distinct, but nonetheless intermingling and reinforcing, perceptions of vocal timbre as an indicator of race, bearing in mind the fact that vocal sounds are never experienced in a purely sonorous realm, divorced from contextual information. Rather, non–sonic aspects, including preconceptions of race, tend to influence how sound is perceived. My third and fourth contentions deal with the definition and subsequent analysis of voice. Both claims account for the fact that each vocal sound uttered is materially produced and through that process imprinted onto the vocalizer's body and therefore, in time, becomes part of the vocalizer's vocal sound; and both recognize the complexity that this adds to any attempt at thinking through voice and race. I hence propose, drawing on concepts from dance and choreography, a theoretical and analytical framework that can address voice as the product of both societal shaping *and* individual articulation and materiality. This framework foregrounds the ways in which vocal timbral character is mistakenly attributed to race.[8] Thus, we may consider how the sound of a singer's voice is in fact a co–creation to which listeners significantly contribute.

Contention One: Hearing is guided by non–sonic information, including preconceptions

In part, it is because no single type of sensing takes place in isolation that voices are perceived as racial indicators. While it may seem that a listener's assessment of a voice is based purely on the voice as it is heard, this evaluation is actually made on the basis of an informational composite, parts of which may more strongly influence the listener's judgment. What we refer to as "sound" is in reality a composite of visual, textural, discursive, and other kinds of information. In other words, the multisensory context surrounding a voice forms a filter, a "suggestion" through which we listen. As such, our contexts and our attitudes determine what we hear. While the sound of the

voice is indeed experienced and described as objectively meaningful, we cannot but perceive it through filters generated by our own preconceptions, which together constitute a compass that we use to navigate between vocal input and extra–vocal context.

When the informational composite that comprises "voice as heard" seems to point toward what a listener understands as "difference," what she presumes to hear is precisely that: difference—including racial otherness. A number of studies confirm the effects of social information on the perception of sociolinguistic variables.[9] For example, Nancy Niedzielski (1999) concluded that listeners tend to hear according to stereotypes suggested by current sociocultural circumstances. Forty–one Detroit residents were asked to choose, from a set of synthesized vowels, the token they felt best matched the vowel presented to them on a recording. All of the recordings were of a fellow Detroiter, but half the subjects were told that the speaker hailed from Michigan while the other half were told that the person was from Canada, directly across the Detroit River. The subjects who believed that the speaker was Canadian tended to choose the raised–diphthong token /aw/, while the subjects who thought the speaker was from Michigan tended to chose the unraised diphthong token /a/ (in words like "about" and "house").[10] The only difference between the two respondent groups was in how they perceived the nationality of the speaker. Niedzielski therefore concluded that each listener "uses social information in speech perception" (1999: 62). Her experiment suggests that listening is informed more by what people *believe* they hear than by what they actually hear.[11]

Just as knowledge about the social context surrounding this sound sample framed listeners' perceptual strategies, so might a photograph effect the way in which a sound is heard. Donald L. Rubin (1992) addresses the impact of visual aspects of the listening experience. In his experiment, a native speaker of American English recorded a lecture. This single recording was paired with a picture of what appeared to be either an Asian lecturer or an Anglo–American lecturer. Subjects, drawn from a pool of American college undergraduates,[12] were asked to listen to the tape, paired by random selection with either picture. Questions were asked regarding the clarity of speech, level of accent, and coherence of the lecturer. Although the lecture was identical for each picture, the recording paired with what appeared to be an Asian lecturer was, in comparison with the recording paired with a Caucasian lecturer, rated less clear in speech, higher in level of accent, and poorer in coherence. Here, again, we see how extra–sonic information affects perception of the voice more than does sonic information.[13]

Contention Two: Correlation is not to be confused with causality

Where word choice, accent and pronunciation—things one *does* with one's voice—are being judged, it is relatively easy to pinpoint the prejudices of judges. However, where timbre (*the sound of the voice itself*) is concerned, identifying perceptual patterns is more challenging. There is, for example, a lack of consensus about whether the race–voice correlation is always present, even among expert vocalizers and listeners such as opera singers. African–American opera singers (as well as members of other ethnic groups) differ in their abilities to distinguish African–American singing voices from those of other ethnicities. Regarding the issue in general—the question of whether race is recognizable in voice—these singers also maintain a wide range of positions; their responses range from "yes, always" to "no, that's not possible" to "sometimes."

Soprano Grace Bumbry says: "I can *always* tell when there is a black singer, or a black speaker. I can *always* tell. Maybe I'll be wrong one time out of a hundred" (Schmidt–Garre 2000). In comparison, soprano Shirley Verrett believes that she can identify a black singer most of the time, but she recounts seeing Marilyn Horne, a singer she had previously thought was black, for the first time. She recalls: "When I found out it was a white person I said, 'Hmmm, there goes that.' But that doesn't happen very often, I do admit. It's very rare when I would mistake a white singer for a black singer, but I have mistaken black singers for white singers many times, especially the lighter voices. When you get down to the mezzo voices, the dramatic soprano voices, somehow the weight of the voice gives it away" (Story 1990: 187). At the other end of the scale, the celebrated African–American tenor Vinson Cole admits that he heard Martina Arroyo's voice—considered by many to be the quintessential representative of African American timbre—on the radio for many years before he learned from a picture that she was black. "You come into this world like a blank page," says Cole. "You don't know what you like or don't like. You don't come into the world with prejudices. They depend on what you're taught and brought up with" (Smith 2002).

These perceptions bring us to my second contention: when we hear a voice that happens to align with our preconceived ideas of racial differences, *this correlation is not to be confused with causality.*[14] That is, a correspondence between what is visually and sonically understood as representative of a particular racial category in a given time and place is not necessarily caused by an essential body of an essential ethnicity in question. That is, the vocal timbre that might be perceived as evidencing racial correspondence is only one of many vocal timbres that body, that voice can emit. So, when vocal

timbre happens to correlate with other markers that we associate with race (skin color and so on), we need to interrogate this correlation rather than simply assuming it to be a *causal* correlation.

We can divide the output of the voice into two general categories: first, that which is carried by the voice (words, pitch and so on)—or, to imagine this slightly differently, that which can be articulated by many different voices while retaining a singular identity;[15] and second, that through which the linguistic or paralinguistic content is articulated—in other words, the vocal timbre. We might also imagine timbre as that which cannot be articulated by another person; that is, as that which a person attempts to copy when trying to imitate another's voice, rather than simply repeating the content of the utterance. The perception of content has been grounds for much scholarship, exemplified by Rubin's work. Timbre, however, has proved challenging to study in relation to race. Therefore, even though current scholarship[16] affords no evidence that one's vocal timbre results directly from one's race, researchers have yet to identify explanations or concrete examples of this apparent non–relationship.[17] In general, timbre is notoriously difficult to study. Especially in regards to the perception of identity, we do not yet possess satisfactory analytical tools that may address timbre with the nuance it deserves.

My long–term objective is to work toward a means of untangling confusions about timbre that may lead to racialized conceptions of voice. Such a project is crucial given the voice's heavy metaphorical burden of essence, subjectivity, and presence[18] is both consciously and unconsciously taken as innate evidence of race. My strategy is to approach the fraught relationship between race and vocal timbre from multiple angles, one of which is performance. To develop an understanding of voice as material and action, I have relied on my own experience as a singer, which I regard as a mode of research and explicit analysis. I will now turn to my performance work, specifically to the *Voice Box* project (1999–2012), my work in vocal pedagogy and contemporary dance, and the connections thereby illuminated between dancing and singing. Through *Voice Box*, I explored the material singing body; and through contemporary dance and vocal teaching I investigated how the body's actions give rise to sound.

Contention Three: The material of body and voice never exists as such

The *material* that is the singing voice, i.e., the body in its material dimension, never exists in a pre–cultural state. The vocal, material body is always already formed by the cultural and social context within which it vocalizes.[19] Each

utterance (made by one's own body and by others') leaves imprints on one's ligaments, tissue, and flesh. As a result, voice is never heard in a state prior to the impact of cultural, social, and other outside forces. In collaboration with French fashion, textile, and object designer Elodie Blanchard, I explore these notions by creating devices that reshape the form and restrict the movement of the body, making apparent the connection between the shape of the vocal apparatus and the sonic result.

The *Voice Box* project consists of three vocally restrictive devices.[20] At the intersection of functional sculpture, accessory, and performance piece, each device focuses on a different area of the vocal system, modifying its airflow and resonating spaces. Because the physical and material activities and changes that constitute vocal usage take place internally and are mostly invisible (excepting a few visible changes such as bulging veins), this project intends to make visible and tangible the processes regularly undergone by voices. While manipulation of the throat area is a sensitive process that may be considered risky, and although my project's primary intention is not to provoke physical discomfort,[21] an important goal of *Voice Box* is to viscerally convey the stakes involved in the shaping of the voice through the manipulation of the body, which goes on in everyday, common, and typically non–strenuous vocal interactions. I intend to use *Voice Box* in musical vocal performances, and to show it in interactive art exhibits where audiences can experiment with their own bodies and voices.

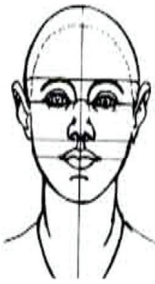
Each component of *Voice Box* targets different areas of the body. The *Throat Sleeve* reshapes the throat area; *The Squeeze* constricts the entire body into a very small space; and *Blow up/Pumped* forces the body into an erect, expanded posture. As such, the three different "voice boxes" target three of the main areas of the vocal apparatus: the throat, the mouth and nose cavities, and the overall body which—despite the popular idea that vocal production is restricted to the lungs, throat, and mouth—indeed constitutes a part of the vocal apparatus. When wearing the *Throat Sleeve,* the user can modify the diameter and shape of the throat in different ways. (See Figure 1 below.)

Unlike, for example, a cello, which cannot be reduced to the size and shape of a violin, the voice is an acoustic instrument that can radically change its shape. As a result of the modification caused by the *Throat Sleeve*, the voice changes in pitch, amplitude, and spectrum—and these are the fundamental properties of sound. That is to say, if the parameters of pitch, amplitude, and spectrum are altered, a wholly different sonic character results. The *Throat Sleeve* can be worn on any throat, therefore anyone can acquire the ability to form her throat into the positions required to produce a variety of vocal timbres.

THE THROAT SLEEVE.

The *Throat Sleeve* ressembles a Lycra neck warmer.
Objects can be added into hidden pockets that create different shapes by adding pressure on the neck.
The *Throat Sleeve* has grommets and pockets at the top and bottom into which sticks (akin to tent poles) can be attached.

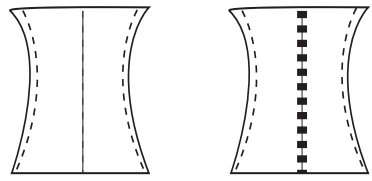
INSPIRATIONS



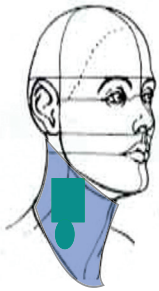
THE NECK WITHOUT MODIFICATION.

MODIFICATION 1: WARMTH

The *Throat Sleeve* worn without modifications.
This warms the neck.

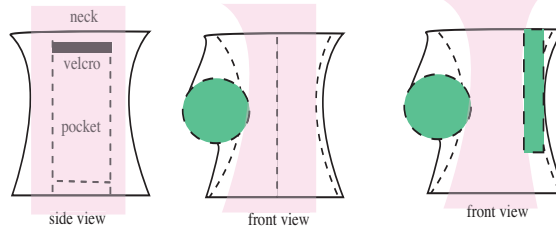


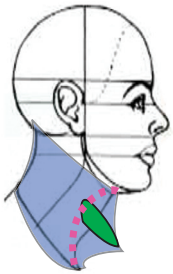
Tight Lycra sleeve, zipped in the back, with four seams that follow the contour of the neck.



MODIFICATION 2A: PRESSURE TO THE SIDE

Objects, still or not…, are inserterd into the side pockets of the *throat sleeve*.
Depending on the pressure and shape desired, objects can be inserted.

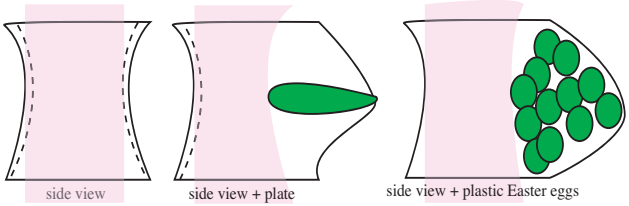


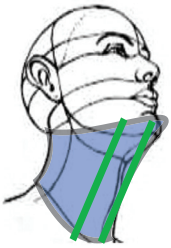


New throat shape indicated by dotted pink line

MODIFICATION 2B: PRESSURE TO THE FRONT

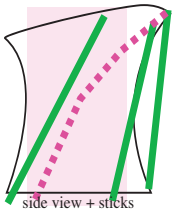
The objects are inserted into the front pocket of the *Throat Sleeve*. Depending on the pressure and shape desired, objects can be inserted.



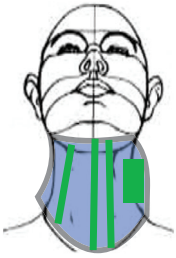


MODIFICATION 3: HEAD PROTRUDING FORWARD

Sticks are inserted into the pockets, akin to tent poles.



New throat shape indicated by dotted pink line



MODIFICATION 5: ALL THE ABOVE IN DIFFERENT CONFIGURATIONS

Figure 1: The *Voice Boxes*, *Throat Sleeve* sketches for construction. © Elodie Blanchard, 2012.

The Squeeze, as its title indicates, squeezes the entire body into the smallest possible space, compressing the body mass. The effects include a minimization of all bodily expansion, which entails constricting the lungs and the opening of the trachea. While the most immediate effect is on the amount of air it is possible to inhale, control of exhalation and the size of the resonating cavities are also affected. Additionally, and perhaps less intuitively, *The Squeeze* affects the overall relationship between the body's flesh and frame. Besides limiting the lengths of phrases that it is possible to sing, this intervention also affects vocal timbre. While the length of the vibrating vocal chords determine the pitch of the voice, its timbre is determined in large part by the tautness of the flesh surrounding the vibrating cavities (i.e., the neck and face). An analogy might be the tautness of the skin drawn over a drumhead. As this skin is tightened, whilst the diameter of the drum head remains the same, the pitch and timbre of the drum gradually changes. Similarly, as the body is squeezed, the flesh and skin drawn over its bony frame become slack. This alteration to the areas through which vocal sounds vibrate affects the timbre of the voice.

Blow up/Pumped forces the body into another posture: erect, expanded, and in many ways the opposite of the pose enforced by the *Squeeze.* While the *Squeeze* constricts all areas of the body, this *Voice Box* expands the body as much as possible. This also affects airflow control and vocal timbre, but in a contrasting manner: *Blow up/Pumped* eases the process of airflow control. Pulled by the frame, the body's internal reverberant spaces are maximally expanded. The sonic effects include a tauter and more reverberant sound and the possibility of longer vocal lines.

While my idea for these devices arose from feeling vocally "boxed in," unable under given sociocultural circumstances to produce the sound expected of me, it developed into the general notion that *the vocal apparatus is already restricted* when the tools necessary to shape it are unavailable. The physically restrictive harnesses that are the *Voice Boxes* externalize the inner, typically hidden conflict between corporeal restrictions and sonic expectations. *Voice Box* is thus a meditation on the gap between preconceived or desired vocal sounds, and the degrees of (in)ability of the given vocal instrument to produce such sounds. The *Voice Box* project also stages, and brings to the forefront of attention, the physical alteration of the vocal instrument that results from repeated and limited vocal production. An analogous, yet hardly successful, project is the physical alteration—in this case, a dire injury—induced by Robert Schumann's nineteenth–century mechanical device that was intended to lengthen and strengthen the fingers.[22] Generally, then, acting material bodies may be formed and physically altered by mechanical devices, deliberate impediments, and even repetitive imitations of sonic

ideas. Repeated action literally forms the body.[23]

Additionally, these harnesses materialize metaphors for the ways in which quotidian expectations reinforce certain vocal modes and, as such, limit vocal identity, output, and possibilities. The body that sings takes on these limiting parameters, which thus are no less restrictive than our *Voice Boxes*. However, the extreme nature of *Voice Box* promotes awareness of the vocal instrument, its materiality, and the limitations we place upon it, all of which would be challenging to decipher by simply observing the vocal instrument in quotidian or practice–specific contexts. While each of our devices constitutes an extreme example of oral and vocal restriction, they are not metaphors; these devices are heuristics which are quite literal in modeling how the throat and mouth are physically shaped by external corporeal forces.

Even if a figurative voice box were to be imposed upon and then removed from a singer, the ways in which it restricted her body would leave its mark—just as a callus or a limp might not fade even after the conditions that created it had disappeared. In other words, each person is born with a physical body which, throughout its lifetime, is never left to its own devices—and even if a particular pressure on that body is eased, physical imprints of the trauma remain; and these become integral aspects of the body's sounding. The ways in which a body is physically shaped by vocal expectations and restrictions, affirmative as well as restrictive, are no less violent or intrusive than our *Voice Boxes.* This leads us to the play of names which the title of this project seeks to evoke. Our voices are physically and metaphorically bent into certain corporeal and sonic molds so that they may fit certain preconceived sonic identities.

Contention Four: Singing is not sound, but action

In addition to my work with *Voice Boxes,* my research included extrapolating, from observations of *involuntary* sounds due to bodily movement, the relationship between physical movement and *deliberate* sound production. Observing modern dance classes, I noticed small sounds that resulted from certain motions. The close study of and engagement with the body during two different activities—singing and dancing—strongly influenced my current theorizing of voice, which centers on questioning basic assumptions about singing.

Informed by these two bodily practices, my objective while singing shifted from attempting to produce a particular sound in order to sing a particular type of music—thereby imprisoning my body within ideals—to exploring the following question: if I carry out an action with my body,

what is the sonic result? In short, I realized that *the framing and definition of an action or event may shift, even while the event remains the same*. Via one frame, we understand an event as, for example, a landing after a leap; employing another frame, we understand the same event as a thumping sound. A sound–focused model of singing would say: our goal is to create a

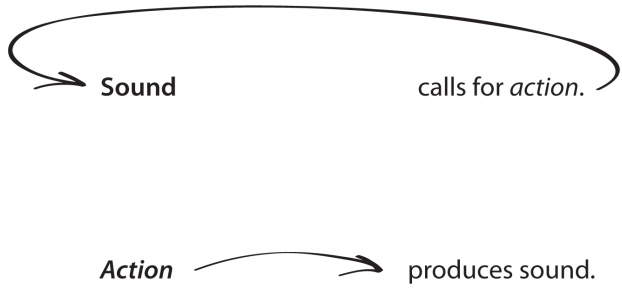


Figure 2: Sound–versus action–based notions of singing.

sound that is similar to the "thump," while an action–focused model would say: our goal is to leap and discover which sonic ranges this action can create. Considering sound in this way allows us to radically rewrite notions of sound and action in relation to cause and effect (see Figure 2).

I contend that scholarship has been unable to fully analyze the situation of vocal timbral identity not only because timbre resists analysis, but also because we have thus far operated under mistaken notions of the voice in general, and singing in particular. Singing, I argue, is not sound but a dynamic interaction, a co–creation of action and what we typically think of as "sonic material."

Intervention One: Sound is a symptom of preceding actions

As we will see below, if singing is an action and sound its result, we may think about sound from the perspective of *perception*, as opposed to production. Thus, if we apply insights from *Voice Box* and the observation of dance to the question of racialized vocal timbre, we may realize that our notions of visual racial norms often match up with our notions of vocal timbral racial norms precisely because deep–seated beliefs correlate both aural and visual phenomena with race as an essential category. However, we tend to posit a relationship of cause and effect between these norms. Merely because our notions of vocal–timbral racial norms *often* align with our notions of visual racial norms, we mistakenly extrapolate and assign a causal relation-

ship, firstly to a notion of an essential racial category, and secondly to a cause–and–effect matrix wherein a racial innateness is vocally sonified. This correspondence, which may well arise only during reception, seems to take two different forms. The first possibility is that, as Niedzielski and Rubin have shown, extra–sonic information overrides actual sound, leading listeners to project onto sound what they expect to hear. The second possibility is that the (constructed) visual and sonic categories really do correspond; but, the correspondence has come about as a result of a (deliberate or unconscious) effort on the part of the vocalizer to use her voice in accordance with societal expectations associated with racial categories.

Racial difference is perceived in voices if contextual information suggests that they are non–normative (e.g., non–white, or foreign). But we must take into account that the voice is infinitely malleable—it tends to adapt according to the ways in which it is heard and defined. Therefore, while visual and timbral notions of race do sometimes correspond, the concept of singing as action can help us to understand that these aspects may correlate for reasons other than a sound's genesis in "innate" racial difference. Sociocultural conceptions of race may function as centrifugal forces that funnel the act of singing into prescribed choreographies. This vocal choreography enacts the idea of race perpetuated by the surrounding sociocultural circumstances. In other words, people seen as belonging to a certain race are thus assigned particular vocal choreographies; and in performing these choreographies, these persons' voices sonically align with the racial categories that society assigned to them. In part, what complicates our understanding and ability to analyze any given situation that concerns voice and race is that, in many cases—unlike in Niedzielski's and Rubin's studies where difference was perceived rather than actual—there are often actual, discernible, vocal differences. However, rather than arising from innate physical differences, I argue, these sounds are the results of socially imposed choreographies, the performance of which physically alters the vocal apparatus in ways akin to Schumann's hand device, and the idea that *Voice Box* seeks to illustrate.[24]

In short, when voices seem to exemplify racial vocal norms it is *because they act out a choreography that gives rise to these sounds*; it is not because their bodies are limited, able to emit only these sounds. The correlation between race and vocal timbre is not due to innate physical qualities; rather, it is identifiable precisely because societies categorize others according to constructed notions of race. Moreover, people often identify themselves in racial terms, and their vocal actions are prescribed accordingly through this *structural choreography* adopted by or imposed upon them.[25] It is when timbre is believed to sound innate qualities, rather than qualities articulated by a vocal body that has been formed by structural hierarchies, that bodies

are correspondingly categorically organized. Therefore, in order to reimagine relations between race and sound in general, and race and timbre in particular, we must first radically rethink the most fundamental notions of sound and timbre, as well as the theoretical and analytical tools we use to address them. Considering voice as action rather than as sound affords us a productive entry into this important undertaking. The first intervention enabled by such a conception is the possibility of disentangling vocal timbres from the notion that they are innate rather than constructed.

Intervention Two: Play within the structure

Considering singing from the complementary perspectives of material and action not only offers ways to think through and beyond voice as timbre, but also shows us a way into theorizing voice as it functions in tension between structurally imposed bodily practices and individual play or agency. We have established that singing is not a noun (sound) but a verb—an action that gives rise to sound. While I have long considered singing to be a hidden choreography,[26] this notion might be refined by drawing on William Forsythe's ideas on the work of the choreographer and dancer. I will now offer a model through which we may think about singing in relation to the structural limits imposed upon voices and bodies.

Forsythe, himself a choreographer and dancer, considers choreography—or, more specifically, what he terms the "choreographic object"—as "elicit[ing] action upon action." He views choreography as "an environment of grammatical rule governed by exception,"[27] and demonstrates how this plays out in the history–, genre–, and style–based concerns of ballet and other western dance practices. For Forsythe, choreography and dance inhabit two distinct realms. He puts it simply: "they are not the same."[28] While I understand this to mean that although, traditionally, choreography is thought to determine how some body dances—i.e., the choreography shapes the dancing, both moving towards the same end—for Forsythe choreography and dancing do not necessarily share goals. For him, then, choreography is about a basic condition—as fundamental to the determination of movement as, say, the restrictions imposed on (and the possibilities offered to) a person wearing skis—and its horizon is that condition in relation to the body. The art of dancing—whether it occurs within a pre–established choreographic condition or outside such a context—is realized through a continuously maturing ability to differentiate between what, for most people, will remain subterranean gradations of difference, the global effect of which is felt but which would, in most instances, prove impossible for a layperson to perform or pinpoint. While "choreography is an organizational skill," Forsythe explains, dancing is about "accumulating expertise in difference" (Forsythe,

Figure 3: Movement that calls forth vocal sounds ranges from coerced to lightly suggested action.

2012)—that is, it is about developing the ability to distinguish between two very similar, yet distinct bodily positions or movements. Loosely adapting Forsythe's model, I understand choreography, then, as an external structural force that—with a decisive power that ranges from "coercion" to "suggestion"—funnels the body through certain movements and stances rather than others. It is a condition within which we carry out actions, whether those actions are considered dance or, as we will see, song.

Forsythe asks whether choreography must either reside in or be funneled through the body alone. His own answer is "no," and to this end he develops a practice involving the choreographic object. One example of a Forsythean choreographic object can be seen in the piece *White Bouncy Castle*, which indeed consists of a giant white bouncy castle.[29]

The physical properties of the environment provided by the bouncy castle offer certain options for activity (bouncing, falling) rather than others (walking, standing still).[30] A feather duster is another choreographic object. Holding it perfectly still, for example, requires a particular range of bodily stances. "If you hold a feather duster, you realize that you are vibrating the entire time. It tells you something about yourself physically. That's what makes something a choreographic object," says Forsythe. "You're looking at how you move unconsciously, and you try to engage with that."[31] The choreographic object is a channeling of (subconsciously) unfolding bodily activity. It is a significant departure from the definition of traditional choreography—a prescribed set of movements—since it fails to offer directives on a micro level. For example, it dose not tell the body to bounce around in this particular way, at this speed, with this quality of movement. Rather, it offers a meta–condition that renders these movements, speeds, and qualities the only options. In Forsythe's words, a choreographic object is "a perfect ecology" that offers an "ideal logic."[32]

This is useful for my thinking about singing as an action carried out through a choreographic directive because it also envisions choreography as a set of actions called forth by a set of conditions. In *White Bouncy Castle*, Forsythe offers his cast of dancers, which consists of audience members, the condition of a physical environment with a wobbly, uneven surface that will

cushion potential falls. Particular types of movements, their qualities, and so on arise as a result of *inhabiting* the castle's condition. Similarly, the minute inner movements giving rise to vocal timbres that have been organized into various racial categories are not innate, but rather situational. In this case, the condition is the situation of a given person within a structural concept of race. To be clear, the participants in the bouncy–castle–as–choreographic–object scenario do not always bounce and wobble *outside* the bouncy castle; in fact it would be close to impossible to do so. The experience of being defined by a given racial category is an equally strong and indeed formational choreographic object. One's performance of a racial category, then, is not determined by innate qualities, but takes place within and as a direct result of the condition of racial categorization that holds the body within its movement–action structure. The *White Bouncy Castle* within which voices and the acts of singing are formed is race.

While the choreographic situation locks in the meta–structure of movement, the dance is the particular way in which a person moves through that structure, and the way in which she tackles minute options and choices within the landscape. Similarly, to realize that singing takes place through the funnel of the choreographic object, which is seemingly an impenetrable condition (exemplified by the power and importance of racial categories, in this case), is not to suggest that voice is completely locked within a hegemonic structure, such that each person only vocalizes within a fixed, formative grid. While I believe that voice is commonly heard and articulated within such a configuration, I would like to consider the possibility of room for agency, even within this tightly confined structure. Thinking about singing as an interlocking dynamic of choreography and dance (rather than as sound) opens a space for thinking about agency in this situation beyond sheer subversion, disruption, sabotage, destabilization, and other such forces. While I will not explore this idea in the detail it deserves here, I find Forsythe's notion of dance productive in considering these types of counter–forces against a choreography or hegemonic structure that is also controlled by those very forces.

Forsythe defines dancing, in contrast to choreography, as "differentiat[ing] between different qualities."[33] This means that one can find room for play within the structure of the choreography. To me this seems to be a more productive way of conceptualizing agency in singing as dance than the idea that individual expression in dance is merely the subversion and disruption of choreography. "A life in dancing," to quote Forsythe again, "is an accumulation of sensitivities to very small differences" (Forsythe, 2012). Similarly, a person's voice is an accumulation of experiences which allows us to find and articulate individual agency within a structure that itself consists of many nuances.

Thus, the dance that is vocal micro–choreography is constituted by the particular way in which the vocalizer moves through concrete limitations determined by structural forces. The way in which, for example, we are expected to vocalize as women or as men within a given culture may be seen as choreography. The dance, in this example, would be the specific ways in which we choose to vocalize, through and despite these limitations. The dance of singing is *the particular way* in which one moves through, vocalizes within, and inhabits a choreographic situation or ecology.

The dynamic I wish to tease out exists between enclosed structural limitations and the individual timbres it is possible to create given those limited options. In other words, each action is a composite, each deriving impetus and impulse from the choreography and the dance, the meta–structure and micro–articulation. This format for thinking through racialized voices allows us to account for the top–down enclosure of vocalization, while leaving room to pinpoint individual agency in this admittedly limited situation of negotiation.

Moving from an understanding of singing as sound to singing as materially unfolding action has allowed us to propose a new, dance–based model for the analysis of voice and vocal phenomena. This model enables us to think about voices as materially structured and materially shaped through action, while remaining aware of the potential for play within that strict structure. Additionally, as I will discuss in the following section, such insights allow us to understand the role of the listener or audience in greater detail, especially in regard to the ways in which the listener partakes in the production of what he or she perceives.

With the "nested circles of singing" sketched in Figure 4, I offer perspectives on the relationship between what the singer herself brings to her voice (in other words, the physical materiality of the voice) and the listener's input into what is nonetheless the singer's voice. Layer 1 contains the singer's actions (for example, the movement of her ligaments); Layer 2 contains any change effected by, or any outcome of, an action, such as increased heart rate, sweating, or vocal cord vibration and sound production. While the entirety described by the three circles appears to a listener as a single package, only the two innermost layers are provided by the singer; the listener herself creates Layer 3.

In Rubin's experiment, the listeners' composite impressions were formed in part by a photograph of a person, which strongly influenced what the listeners subsequently heard. The same recording, then, could be heard in two different ways—the same experience could be diagrammed with two different "third circles": as an eloquent lecture or as a disorganized lecture. However, the two innermost circles, the material and the action/output, remained the same. We can see, then, that Layer 3 is not unmediated output

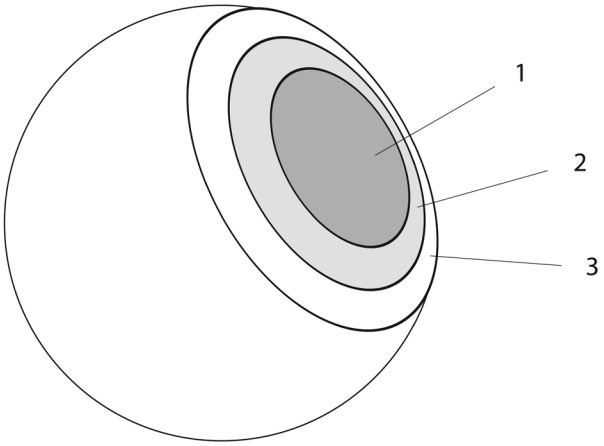


Figure 4: Nested circles of singing.

produced by the singer, but is rather created by the listener based on her experiences, values, and beliefs. This model suggests that when the listener ceases to imagine that singing is passively received sound, and instead accepts that it is action, the listener may come to understand that what she experiences as the voice (Layer 3) is the result of combined contributions by the singer as well as the listener herself. Thus, singing is *not* unmediated material supplied only by the singer.

Re–conceptualizing singing as material– and action–based clarifies the limitations involved in understanding singing as sound. Action–based thinking provides a more productive understanding of the dynamic structure within which voices are *produced and perceived* as they are made to signify (racially and otherwise). In addition, considering singing in terms of *choreography and dancing* illuminates the important role of the interlocking relationship between the hegemonic structures that funnel the body into certain types of actions that in turn produce particular vocal timbres, and the way we act within these given choreographies, each of us with a different tongue, row of teeth and oral, nose and throat cavities. As both dancing and choreography, a single voice can present itself as multiple phenomena with particular characters determined by perceivers. Voice as sound and voice as action, then, are themselves nested definitions of voice; the predominance of one definition or the other depends on the values and preconceptions harbored by individual perceivers (hence the existence of Layer 3).

In summary, while action–based thinking and the choreography–dance model offer ways in which to understand voice and insights into its production, the nested circles suggest a way of understanding the strong role of the perceiver and her beliefs. We could even say that the listener calls forth the voice according to her beliefs.

Conclusion

This project is part of my ongoing effort to think about how music, sound, and voices are conceptualized, theorized, and analyzed, and about what kind of knowledge such definitions and analyses have enabled and closed off. In particular, I have an ongoing interest in how the sensorium beyond sound feeds into conceptions of voice and race that, on the surface, seemingly take place in the sonic register. Because "blackness" as it is "smelled, heard, and felt" (in the words of Mark M. Smith; 2006: 47), has been so difficult to "explain," and has been considered an aspect of human existence that is not "definite or tangible," perceptions of race have for the most part been left unchallenged. Nella Larsen writes exactly about this in *Passing*, her 1929 novella on the multisensory registers of race. In a conversation with (a white character) Hugh Wentworth, Irene, who has passed into white society, replies to his reflection on not being able to tell whether a person is white or black:

> [Irene:] "Well, don't let that worry you. Nobody can. Not by looking."
>
> [Hugh:] "Not by looking, eh? Meaning?"
>
> [Irene:] "I'm afraid I can't explain. Not clearly. There are ways. But they're not definite or tangible." (1929 [2004]: 206)

What Irene means here is that although it is clothed and explained in such sensory terms, race is not simply performed or detected in the visual sensory realm alone. Rather, the sum of what we process multi–sensorially is trained, by virtue of existence in social environments, to carry out the work of corroborating socially constructed racial distinctions.

To understand the social and sensory structures wherein race is constructed, we need to carefully deconstruct, point by point, *how precisely* race eludes the "definite or tangible." This important and challenging work has been carried out by a number of scholars from several disciplines. I'll name just a few. John Cruz (1999) listens in to abolitionists listening to slave songs, and hears how the reinterpretation of the black singer (seeing him no longer as a slave but as a potentially Christian convert or religious *subject*) changes the sound of his voice and song from "unintelligible noise" to "mournful spirituals" (59). Deborah Wong's (2000) theorization of race, through a performance–studies framework, reveals how "[t]he somatic realization of

race is one of the great performative, destructive accomplishments of any society" (87). And, most recently, Daphne Brooks's brilliant subterranean feminist history of *Porgy and Bess* opens infinite possibilities of thinking through the performance of race, as did her book *Bodies in Dissent* (2006).[34] By shifting the question at hand from whether or not African American singers should refuse to perform Bess because of her one–dimensional character, to the question of how to recover the character Bess as a site of "black women's Avant–garde musicking," Brooks changes the premise upon which African–American singers are perceived.

These scholars bring to light various facets of a great *White Bouncy Castle*, the sociocultural conditions within which twenty–first–century voices are formed: a condition that we call "race." In my own way, through analysis that takes the multisensory dimensions of vocal culture seriously, I try to understand the complex material history present in bodies, vocal timbres, and listening practices. My contribution, then, is an attempt to think through specific multi–sensorial analytical strategies that address vocal timbre, with the ultimate goal of better understanding both sonic offerings and listening practices.

⁂

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Notes

1. Steven Connor sharply exposes this fallacy in the opening page of his monograph on ventriloquism (2000:1).

2. For foundational work on race as socially constructed, see Omi and Winant (1986); on the same topic from anthropological and historical perspectives, see Smedley and Smeldey (2005); and on the legal construction of race, see, for example, Haney–López (2006).

3. Many have discussed timbre's elusiveness and the high levels of subjective and extrasonic information that contribute to the perception thereof, including Fales (2002), Olwage (2004) and Wallmark (forthcoming). Additionally, see Hajda et al (1997) for a review of timbre research undertaken in the last fifty years.

4. Also see Annette Schlichter's close reading and apt critique of Judith Butler. Schlichter argues "that the repression of the sonoric aspects of the voice can be read as a symptom of the role of materiality in the theory of gender performativity. Despite Butler's attempts to attend to the material body within a discourse of the performative, the notion of materiality is constrained through the economy of the sign and remains subordinated to the realm of intelligibility, a hierarchy that Butler explicitly rejects" (2011:31).

5. Described in Carson 1995 [1992]: 119–137; Cavarero 2005; Connor 2000; Daughtry, forthcoming; Weidman 2006), and the oculocentric clinical understanding of the vocal apparatus common in medicine and classical vocal pedagogy (including Rodgers 2010; Sterne 1999).

6. Ira Sadoff specifically addresses the metaphor of the poet's voice, a metaphor that is derived from the human voice. I find her description succinct and applicable to the sonorous voice, as I believe that similar sentiments regarding the "poetic voice" as a metaphor are projected back onto the sonorous human voice. In Sadoff's words recounted by Lesley Wheeler (2008): "What we extract from the page is a series of inscriptions analogous to a voice" (221); voice as "workshop cliché," he continues, "assumes myths of constancy, coherence, and universality," and these myths enable the reader's desirable illusion of intimacy with the poet" (Wheeler 2008:37).

7. Please see Eidsheim (2011) on a detailed reading of the transduction and reception of voice. Sound cannot exist in a vacuum; for sound to perpetuate, it needs a material through which to transduce. In my study of Juliana Snapper's underwater opera practice, I consider sound's differing transduction in water versus air, and how singers' and listeners' material bodies interact differently with water versus air. This means that sound takes on a distinct character when it is transduced through water, and another character when it moves through air. The most notable difference is that, through water, sound transduces around four times faster than it does in air (although there are variables, depending on the saltine level of the water, its temperature and pressure, etc.). Additionally, because singing and hearing are materially bound, the material body immersed in water hears differently from bodies immersed in air. For details see Eidsheim (2011).

8. While a thorough discussion is beyond the scope of this paper, I would like to suggest that this model may also be useful in understanding how socially sanctioned categories other than race—such as, for example, gender and class—impinge on voice.

9. It is interesting that the power of such seemingly subtle differences and the way in which they place the speaker in dynamic relationships of power or intimacy, or in "us versus them" situations, is also evident in the extent to which one's interlocutor "accommodates" one's speech. (See Giles, Coupland, and Coupland (1991) for additional information on accommodation theory.) Oprah Winfrey's television interviews have been analyzed for the presence of such accommodation. Winfrey pronounces the vowel of words like I and my with either a monophthong or diphthong. When she discussed or introduced African American guests on her program, the monophthong pronunciation was used 38% of the time; whereas in the presence of non–African American guests, the same pronunciation was only used 10% of the time (Rickford and Rickford 2000: 106–7). While it is believed that the difference is

below the conscious threshold of all parties involved (and when it is detected, it most likely has the effect of mimicry or making fun), similar accommodations can be found in other social dynamics as well. For example, see Gregory and Webster (1996) in relation to class.

10. According to Niedzielski, the majority of white, middle class Detroit residents consider their speech Standard American English. However, the raised diphthong is dominant in their speech. Besides that social information informed the respondent's listening, Niedzielski's study also showed that with the label "Canada," Detroit residents were able to hear the raised diphthong of a recording that indeed was of a Detroit resident with a raised diphthong. However, they did not hear raised diphthong when the recording's label read "Michigan."

11. Niedzielski concludes the study saying, "The results of this study suggest social information must be included in future research in phonetics, sociolinguistics, and social psychology, particularly in the areas of speech perception and language change" (1999: 84). I would add vocal timbres to that list.

12. The information regarding the subjects is limited to that they were recruited from basic speech communication classes at a large southeastern university.

13. Ronald Radano has also observed that we never "Let the music speak for itself" (2003:xi). This is so, as he continues, because "all we hear in black music, or indeed in any kind of music, is inevitably invested in words; in the stores we tell, in the histories we recite, in the associations we make" (xi).

14. This is of course far from a new argument, however, but one that has received less regular attention in a visual-centric discourses.

15. While pitch indeed does contribute to timbre, a pitch can be sung or otherwise articulated without the voice losing its distinct timbre.

16. Including Dillard 1972: 39–72; 186–228; Eidsheim 2008: 7–12, 30–103; 158–70; Mann 2008; Miller 2004: 218–22.

17. Walton and Orlikoff (1994), however, argue the opposite. Excerpting one–second acoustic samples from a sustained /a/, from 50 black and 50 white adult males (newly admitted inmates at the Mississippi Department of Corrections State Penitentiary at Parchman), the study reports that acoustic analysis showed that "although within ranges reported by previous studies of normal voices, the black speakers had greater frequency perturbation, significantly greater amplitude perturbation, and a significantly lower harmonic–to–noise ratio than did the white speakers." Listeners were able to "identify the black and white speaker in a voice pair 60% of the time," which the researchers point out is "a level significantly greater than chance" (741). However, there were "no significant differences in the mean fundamental frequency or formant structure of the voice samples." The researchers therefore concluded: "listeners relied on difference in spectral noise to discriminate the black and white speakers" (738).

To the work I present here, these findings are not contradictory. Firstly, it is exactly because the voice is an organic instrument and matter, infinitely malleable and shaped by daily usage, formed by the way a given society identifies a person and the way a person identifies herself, that it can sound according to the social groups identified by a given society. Secondly, the researchers note that while previous studies have examined whether listeners can identify "black and white speakers" in the context of contextual speech (which contain "phonological, morphological, lexical, and/or syntactical information" – and here the studies Baugh, 1983; Dillard, 1972, 1977; Fasold, 1981; Hanley, 1951; Labov, 1983; Tarone, 1972; Wofram & Fasold, 1974 were referenced), they would like to identify the difference between black and white speakers "from isolated vowel samples and to provide more detailed analysis of the acoustic characteristics of those samples as they relate to voice quality" (739). I read that

to mean that they seek to identify race present in voice "prior" to the vocal level of accent, which they recognize is a social factor. However, while the acoustic analysis and the listener identification analysis were undertaken with the vowel /a/, isolated and decontextualized, that vowel /a/ was produced by a person who learned to pronounce that vowel /a/ within the context of speech and therefore, although the sound sample represented an isolated /a/, the quality of that vowel /a/ cannot be isolated from larger contexts. Thirdly, while the researchers mock George Krapp's (1924) "undocumented 'experiment'" and conclusion, which states that "Negro speakers cannot be distinguished from white speakers merely by the quality of their voices" (quoted on 738), Walton and Orlikoff rely on a 1945 study from apartheid South–Africa, comparing "102 cadaveric larynges from Bantu South African blacks with those obtained from 23 white South Africans" wherein the study's author, Boshoff, "noted several cartilaginous and soft tissue differences relating to both size and biomechanics." Walton and Orlikoff cite Boshoff's conclusion: "On the whole, as demonstrated by the musculature in particular, the South African Negro larynx is a more powerful organ than that of the Caucasian. Those muscles which are the same in the two races are broader, stronger, and often of more complicated attachment in the Negro. The finding in the Negro of distinct differences from the Caucasian anatomy of the vocal apparatus would naturally lead one to suspect similar differences in function, more especially vocalisation. (pp. 49–50)." Considering the Apartheid context within Boshoff"s study took place, it is difficult to imagine any other outcome than stark difference. To the contrary, a leading American otolaryngologist has stated that by examining vocal folds, it oftentimes is difficult to distinguish men from women, let alone one so–called races, from another (Eidsheim 2008).

18. See Weidman (2006) and Daughtry (forthcoming).

19. Even prior to birth, the neonate is formed by and through the soundscape that is created within the uterus and penetrates it from without. While most experiments with neonates' listening abilities are performed after 26 weeks of gestation, the onset of hearing, Arabin notes, "does not seem to be an all or nothing phenomenon" (2002: 425): responses have been observed as early as 20 weeks. Speculations on the centrality and impact of such relation to the sonic world is even considered by psychotherapists, who may therefore postulate that relationships with the mother's voice as presence and absence begin prior to birth and might even present proto–experiences of presence and absence, thus may be important to analytic work with borderline and psychotic patients (Maiello 1995).

20. The Voice Box project is currently in production; currently only prototypes exist. The project is scheduled to première in fall of 2012.

21. While it is not my motivation nor primary intention to reference the "Máscara de Flandres" (or Iron Mask) used as punishment of slaves and prisoners in Brazil and elsewhere, or other mask–like contraptions used during slave trade, I recognize that Voice Box cannot but evoke such histories of oral control. For the history of a discussion of Jacques Arago's image of a man wearing the "Máscara de Flandres," see J. Handler and A. Steiner (2006). For the appropriation of the image to stories about martyred female slaves in Brazil, see J. Handler and K. Hayes, (2009). I thank Kariann Goldschmitt and Jason Stanyek for talking with me about this.

22. I thank Mandy–Suzanne Wong for reminding me about this.

23. We are familiar with this idea in the context of sport. For example, we see that the distinct training associated with a particular sport, say, long distance running versus sprinting, conditions and shape the long distance runner's or sprinter's bodies differently.

24. Here, I come to a conclusion that opposes that of Walton and Orlikoff (see endnote 17). I would argue that when difference is discernable, rather than due to innate racial difference, it is due to the way in which the vocal apparatus is physically and materially used and performed.

25. With Grant Olwage (2004), I don't necessarily seek to "wish away 'the black voice'" (208). Within the context of his study, "the black voice is something very real that has a history." In the face of colonizing and civilizing project within the South African context, maintaining a distinct vocal culture can both be thought through as an act of subversion as well as "the desire for a reformed, recognizable Other [was] a subject of a difference that [was] almost the same, but not quite" as Homi K. Bhabha has argued (quoted in Olwage 2004:209).

26. See Eidsheim (2008).

27. Forsythe, William, "Choreographic Objects." http://www.williamforsythe.de/essay.html (accessed March 9, 2012).

28. In a private conversation on March 7, 2012, and during a public interview with Tim Murray, on March 10, 2012, William Forsythe described the realization that dancing and choreography "are not the same."

29. "The choreography," according to Forsythe's official website, "is the result of complete physical destabilisation [sic.] and the resulting social absurdity. The inadvertant [sic.] euphoria that results from the situation is infectious and, in some cases, addictive." http://www.william-forsythe.de/installations.html?&no_cache=1&detail=1&uid=30 (accessed March 12, 2012).

30. See the promotional video for the White Bouncy Castle http://www.youtube.com/watch?v=iNGBbJ_CmPo, (accessed March 9, 2012).

31. Public discussion of "Forsythe's artistic practice, his development of choreographic objects, and their relationship to the choreographic work, Nowhere and Everywhere at the Same Time." "A conversation with William Forsythe and Timothy Murray. Milstein and Rand Halls. Sponsored by the A. D. White Professors–at–Large Program." March 10, 2012, Cornell University. http://www.arts.cornell.edu/sochum/shc_events.html (accessed March 9, 2012).

32. Ibid.

33. For Forsythe this means: a skilled dancer can both differentiate between and articulate or carry out minute physical differences. An unskilled dancer would notice that, say, an arm had moved from a position alongside the body to one horizontally extended from the body, while a skilled dancer, or differentiator, would see the fine details of how the arm was held alongside the body and the quality of the movement to a horizontal position, and would decipher the cues and impetus that had given rise to the movement. She would also be able to carry out infinite variations of this movement. A less–skilled dancer or differentiator would only be able to see, in that movement, two crude positions.

34. See Daphne Brooks, *Bodies in Descent.*

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