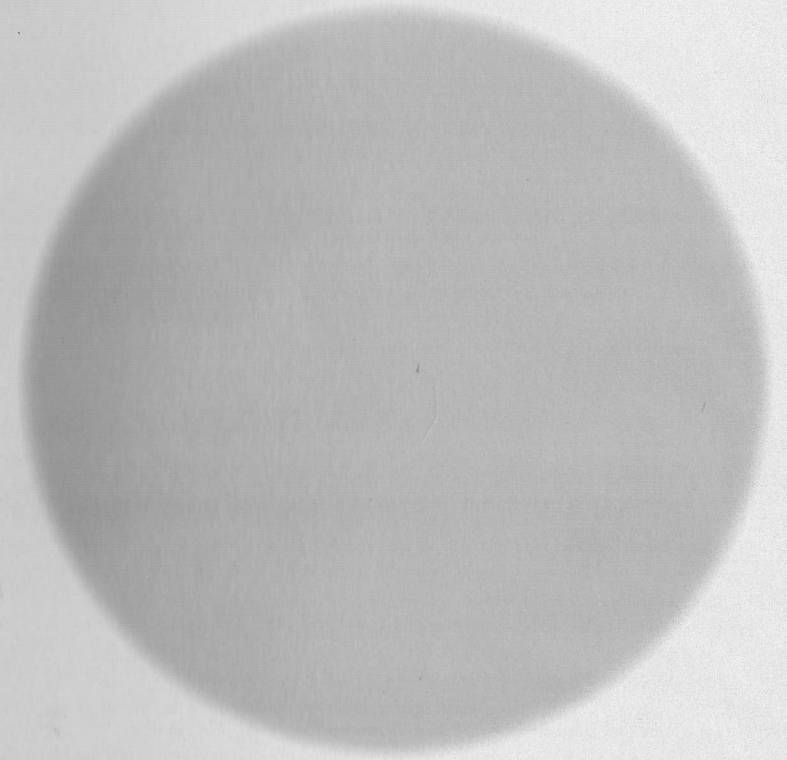


KUNSTMUSIK



ISSN 1612-6173

SCHRIFTEN ZUR MUSIK ALS KUNST

16

CLARENCE BARLOW · ADRIAN KOYE · MARC SABAT · GARY
SCHULTZ · WOLFGANG VON SCHWEINITZ · CHIYOKO
SZLAVNICS · ANTJE VOWINCKEL · JEREMY WOODRUFF

O Glissand-o!

Line (orig. “flax”, “līn-”):

“A path through any two points; a continuous mark; any path, curved or straight; an infinite one-dimensional object.”

*Across the tepid ocean a line was drawn
to pull men from shore to shore.*

*It drew them like a magnet...
Spines bowed under the weight of global stature's wage,
Gold teeth flashed against deep-throated operas!*

C.S., 1995 [Rev. 2014]

It is said that a line comprises an infinitely many points. Now if it were a *sounding* line combined with one, or more, additional sounding lines, and if it had a very small slope, and were extended in time, that “infinitely many points” might be heard as an infinite number of different chords!

All things begin and end with a (perhaps imperceptible) glissando.

A glissando is simply continuous change in the parameter of pitch/frequency, with starting and stopping points.

We are used to continuous change, in most parameters, especially those relevant to life, and in the world around us.

The glissando is one of the most exquisitely developed techniques for clarifying intended meaning in spoken languages.

It is central to the oral expression of emotions.

It is remarkably elaborate and varied as a technique for ornamenting language (an equivalent of calligraphic elaborations?).

It is vocal, it is natural, and yet often just sounds like a cliché or a quotation in music.

Why?

(The human voice versus valves, frets, buttons, hammers, and other machines...? Is spoken language, i.e., verbal expression the freest sphere in existence today?)

Tonal discrepancies and cognitive dissonance in Peter Ablinger's *Voices and Piano: Angela Davis*

In the series of pieces called *Voices and Piano*, begun in 1996, Peter Ablinger employs a computer program (written by Thomas Musil at the IEM Graz) to transcribe an audio recording of the voices of well-known cultural personalities, into particular parameters for music notation. Through the layering and collaging of these different rasterized transcriptions Ablinger compiles a piano part that plays simultaneously along with its source audio throughout. A further option in the pitch selection phase of the process allows for a diatonic rather than full chromatic pitch collection to be extrapolated from the audio analysis. Ablinger chose this diatonic option, unusual in the *Voices and Piano* series, to explore in the setting of Angela Davis's voice. Here I show how Peter Ablinger's musical realization in *Angela Davis* (completed October 31st, 2005) specifically reveals musical content of the speaking voice and interrogates tones of voice in spoken rhetoric by positioning it off the tones of the piano.¹ The music is by necessity fairly at odds with the manner of speech and rhetorical content of the words even while it displays striking affinities wherein correlations between music and spoken text can be observed. These contradictions arouse a state in the listener known as “cognitive dissonance.” The composition in this way also provides a unique opportunity to speculate on sound, music, affect and politics. The *Voices and Piano* pieces succeed in containing the highly personal and authentic compositional voice of the composer while at the same time offering insight through these experimental means into the nature of human musical affective cognition. Ablinger confirms, “I strive to make ‘perception’ perceptible...there is a way that one person can perceive sound as if they were two different people and that is what I try to achieve.”²

¹ To track these discrepancies I used the software Melodyne, the linguistic software Praat and spectrograms from both Peter Ablinger's composition and of Angela Davis's voice alone. I don't claim that the resultant transcription is more ‘accurate’ as such, only that it is more detailed in certain particulars.

² Paraphrased and translated from German, Deutschlandfunk, “Atelier neuer Musik”

Cognitive dissonance has been defined as “the subjective perception of incompatibility between two self-relevant cognitions”. Cognitive dissonance and tonal dissonance share certain compelling similarities on different levels. Tonal dissonance has long been identified with a state of physiological or psychological discomfort, which needs resolution via consonance. This feature is shared with cognitive dissonance, as Elliot & Devine (1994) documents that cognitive dissonance also produces a distinct feeling of psychological discomfort; and it has the same implications for resolution, as the theory holds that cognitive dissonance impels an individual to resolve that dissonance in one of the following ways: “(a) adding consonant cognitions, (b) subtracting dissonant cognitions (by ignoring, suppressing, or forgetting them), (c) replacing existing cognitions with others, that is, subtracting dissonant cognitions while adding consonant ones, (d) increasing the importance of consonant cognitions, and (e) reducing the importance of dissonant cognitions.” Consonant cognitions, the opposite of dissonant ones, are defined as self-relevant cognitions that logically follow on from one another.³

Leon Festinger introduced the theory of cognitive dissonance in 1957. Recently however, experiments have been undertaken by researchers at Harvard and at Laval University, Quebec among other institutions, which have sparked an affective and musical re-evaluation of the concept. On the one hand they speculate that the number of possible emotions are essentially infinite, not by virtue of their location on the arousal/valence grid but rather because of an individual’s own choices and preferences that additionally instigate therein a further web of cognitive dissonances and consonances of differing strengths.⁴ These they call “the emotions of cognitive dissonance.” On the other hand, they hypothesize that tonal music (Mozart in this particular instance) allows the psyche to diffuse its usual need to add consonant cognitions as a result of dissonant ones; i.e. that exposure to consonant music allows the individual to be able to better contain cognitive dissonance in their psyche.⁵

I speculate through a close analysis of *Angela Davis*, that cognitive dissonance is aroused in a listener through a bipolar effect of listening, which occurs in *Voices and Piano*. This bipolarity is induced by discrepancies of metric emphases, phrase structures as well as intervallic and harmonic dissonances between tonal patterning of speech and the equal-tempered replica played simultaneously.⁶ Finally, these

3 Fischer et al., p. 190.

4 Bonnoit-Cabanac et al.

5 Leonid Perlovsky et al.

6 In this article I only discuss discrepancies of pitch. See forthcoming Ph. D. dissertation for more.

discrepancies heighten the discomfort and practical difficulty, if not impossibility, for a listener attempting to structurally hear both at once. A listener is forced to choose and commit therefore to one particular way of hearing or the other at any given time. This could subsequently lead to differing conclusions for different listeners due to the reflex of cognitive dissonance reduction, depending on the listening choices that an individual makes.

Many of the places where the discrepancies between voice and piano pitch are most noticeable are due to sudden octave transpositions in the computer transcription resulting from upper formant emphasis in the voice. A tonal discrepancy of this sort between voice and piano occurs in the word “capitalism” in measures 10-11 (see fig. 1). The piano realization of this word is in the sonic region an octave above where it is actually spoken. Looking at the spectrogram, this occurs in the computer transcription process because when Davis’s voice dips into that very low register, the first formant becomes louder than the fundamental. The discrepancy creates a sudden break in how smoothly the monophonic piano lines follow the voice, which is otherwise quite exact up until this point. The tonal discrepancies in the word “capitalism,” just like in constant other examples throughout the piece, are also due to the general fact that the notes at which Musil’s program arrive are a construction derived from mean pitch levels of a quantized area, while in reality the vocal speech construction is a highly micro-nuanced continuous fluctuation and glissando of pitch.

The image shows a musical score for two staves. The top staff is the vocal line, and the bottom staff is the piano accompaniment. The vocal line includes the lyrics: "to do with the na - ture of cap - i - tal - ism. If we're go - ing to rise". The word "capitalism" is highlighted with a bracket. The piano accompaniment consists of chords and single notes. The score is in a key with one sharp (F#) and a common time signature. The measures are numbered 10 and 11.

Figure 1: measure 10 – 11: “capitalism”

Pitch deviation is significant throughout the entire word “capitalism” except for the last consonant “m,” which agrees with the piano pitch on the note C. “Cap-” has a swoop in the beginning half of the syllable with a mean frequency that is equal to a G (196 Hz). But at no time does it actually land on that pitch however, but rather it glissandos through a span of two and a half semi-tones (227 Hz down to

189 Hz.) The syllable more or less comes to rest in the second half of its duration on the note F#, but approximately a whole quartertone flat (an area between 178.5 and 181.75 Hz, 62–40 cents flat.) The syllable “-tal” descends from 162 Hz (E, –29 cents flat) to 150 Hz (D, 42 cents sharp) with a mean pitch of 156 Hz (D#) over the course of the whole syllable, which clashes with the D in the piano transcription. It is also unclear at first, from where the A# in the right hand comes from; the heightened upper formants in combination with the slight vocal fry inflection in this word produce it. The move from G to F# in the piano part, although hardly existent as such, and through D and A#, which are actually not even really present in the voice, are perceived as correct because they are derived from the upper formants and also because they are so fleeting, but nevertheless the moment does not sit comfortably in the ear.

Other minute discrepancies between piano and voice, due to the mean pitch extraction process of the computer transcription, occur constantly throughout the piece. An example is found already in the first two measures (see fig. 2) when the piano has a D in the first phrase (“before anything else”), which is confirmed by the final note D in the lower octave in the next phrase (“I’m a black woman”). In my transcription of the voice however, it is possible to see that the D in the middle octave is really a reduction of a more complicated glissando of tones, which in reality hardly equate to the actual presence of the note D, whereas the D in the lower area is actually quite clear. The strong harmonic and phrasal effect of the D octave equivalency in the piano is completely absent in the spoken phrase. This is just one of many examples of shadow musical closure that come forward in the piano transcription contradicting intonations signaling continuation in the spoken voice.⁷ The first phrase in the piano part opens a space of stacked fourths (descending: F–C–G–D). Except for the E, the whole collection might suggest the blues collection (D–F–G–A–C–D). The centrality of the voice however, is organized in contrast around the median point of the two extreme registers, somewhere around a G#.⁸ The microtonal inflection of the speech is completely divergent from equal temperament and also doesn’t correspond to the microtonal inflection that one would expect for the blues. The first part, “before anything else” is on average about 30 cents sharp, while “I’m a black woman” is on average about 30 cents flat throughout. Such microtonal discrepancies show that the harmonic implications of

7 Listen also to “in South East Asia” in measure 34 to the downbeat of 35.

8 This median G# becomes a prominent feature in the piano’s ‘choral’ material.

the piano are a world apart from the actual tonal material of the speech from which it is derived, causing the ear to be able to track the implications of the subtleties of only one or the other at a time.

Figure 2:
Beginning: “before anything else, I’m a black woman”

In measure 83 in the phrase “on and on and on,” each time the syllable “on” occurs, the piano note is transposed an octave higher, converting the chromatic descending glissando in the voice into a leaping figure on the piano (see fig. 3). The low D# in the voice clashes in pitch against its transcribed double here in the same manner as in the previous example, once again appearing instead as a D. A ‘back and forth’ is expressed through the redundant atonal leaps, which coincides with the meaning of the words: Davis explains here that in effect, she could produce an endless list of cases wherein an African American activist was persecuted for their beliefs. Since we know Ablinger is not directly responsible for such cases of text painting, but rather that the process that he put into motion is, the detachment of this process is what allows us insights into why this manner of speech is rhetorically effective in manipulating innate human pattern perception. Many other cases of similar interesting ‘coincidences’ like this occur in the piece.

Figure 3:
measure 83: “on and on and on”

In actual fact, Ablinger courts these ironies of accidental text painting by intentionally choosing speakers whose speech bears particular interest, and specific examples of speech in which unusual melodic tendencies are plentiful. Angela

Davis's voice has a particularly florid speaking range in this excerpt which sometimes encompasses as much as a 12th or more, in one sentence (the average 'non-emotional' speaking voice generally takes place within the range of a 5th).⁹ The overall range of her speech exceeds two octaves in this excerpt. Ablinger also finds stuttering and hesitancy in speech interesting, of which there are also prominent examples in Davis's speech as well (measures 13–14, 63–64 and 80 among others). Ablinger knew while he was choosing excerpts from the interview that he would employ monophonic passages in places where more emotion comes through in Davis's recorded voice, whereas the "choral" passages would be reserved for areas where a more 'routine' rhetorical tone is present, what Peter Ablinger calls Davis's "psalmic" or "preaching" tone.¹⁰ The assemblage of the audio track is in this way, a priori of note generation, an architectural plan for the whole composition.

The "choral" material of the piano generally creates a D# Dorian tonality which gives way to an F# major centrality with a frequent G# pedal throughout any given passage of this type. The chromatic tonal centers of the monophonic fragments of material, which are interspersed into, and break up all but a few instances of the choral texture longer than a couple of bars, introduces constant ambiguities and side stepping to this harmonic centering. Still, it is in these passages that we get to enjoy a certain sensuality of the interaction of the vocal glissandos with the piano tones because of the longer held harmonies and pedal points of the piano choral material. Here the voice actually sounds more musical in many ways than during the pianos monophonic renditions; the piano playing of a single dynamic and texture (marked *strong and clear, non legato, distinct* by the composer) becomes, in contrast to the voice, pseudo-mechanical in character fairly soon, a fact that exaggerates the discrepancies. The approaches of the voices natural arcs over the choral sections, which eventually merge in pitch, emphasize Angela Davis's sinewy, expansive tone.

Angela Davis's vocal intonations are unconscious manifestations of either her attempt to impress the importance of the African American struggle against hegemonic structures on the listener, or of appealing to the affinities of particular constituencies with the identity expressed in her vocal mannerisms. The realization of the pitches of the speaking voice on the piano enables the speech's microtonal inflections to emerge all the more clearly over the stable equal-tempered grid of the

9 Cook, p. 108.

10 Email communication with the composer, 03.12.2013

piano tones, emphasizing them in some ways as well as contradicting them through the aforementioned discrepancies in others. Anja Kanngieser, says "the affective and desiring aspects within the utterance and its expression [intonation] can form new lines and networks of collaboration and collusion, or reinstate and establish patterns of domination... the relations set up through [intonation] have a profoundly political significance."¹¹ Kanngieser reminds us of Obama's address in 2008 at the NAACP and its widely publicized African American intonation in comparison to his "mainstream" or "white" tone of voice during first press conference upon becoming president-elect. Angela Davis, although her intonations are consistent and do not fluctuate like a professional politician's, still walks a similar line in her vocal intonations as does Obama (however unconsciously or not). Different intonations and different rhetoric are borrowed from European critical theory and some from her African American heritage. And their juxtaposition, integration and contrast have and continue to make a very effective agitprop weapon against political injustice. In Ablinger's composition however these intonations possess a flip side, in their transformation into solely music. The cognitive dissonance here therefore takes on an entirely different aspect from what her speech might otherwise provoke.

In the first sentence, the last consonant 'n' of "black woman" is slightly drawn out with a guttural sound in the throat in the pronunciation of "woman" as it dips into the deepest register of Angela Davis's voice. The most prominent examples of this are not only found in the first sentence but also in "we will continue to be forced to *hide*" (m. 43) and "much much more than they can afford to use *ordinarily*" (m. 70) and if one listens carefully, there are many instances of this vocal habit all throughout Davis's speech. This mannerism of speech, a 'hip' vocal characteristic of urban African Americans in the 60s and 70s, would have immediately recalled a counter- and sub-cultural mode of expression that entails a world of African American connections, political beliefs and affiliations in that time. Each time one of these instances occurs, the higher formants more or less disappear and the lowest formant spreads out into a band of noise over the span of more than an octave (or more.) Naturally the automatically transcribed piano tone(s) for the blurred pitch of the vocal fry (or an inflection of it) often stand out with irregularities from the preceding passages. And then the word itself stands out of the overall texture as well. Since the vocal fry is always at the end of phrases or sentences, it inevitably causes

11 Kanngieser, p. 340.

interference with the closure and determinacy usually experienced by a listener of them there.¹²

Angela Davis's early life in Alabama is audible in her intonations—a tendency to slightly draw out the vowels with a breezy but somewhat ostentatious vocal range of stark contrasts. These elongated vowels and large intervals come out in Davis's speech in emphasizing expressions of exaggerated circumstances, sarcasm, irony, conviction and faith and they result in long glissandos over large sonic areas. These Southern intonations occur in many places throughout the piece, and hold a special affinity for particular listeners. An example is the deep irony in the tone of voice with which Davis says, "Hoover, in collusion with Nixon and Reagan decided on making an example of me"—spanning the interval of a major 10th in measures 65–67. In actuality, these politicians failed to make an example of her, but succeeded in making her into a shining example: because of the FBI manhunt Angela Davis became an international hero. Angela Davis's mocking voice goes lower in scorn at the very end of the sentence here than anywhere else in the piece. The piano executes a leaping figure at the place where the voice has a stepwise chromatic movement at the very end of the sentence (see fig. 4). In any case the discrepancy consists of a striking exclamation mark in the piano added to Davis's statement wherein the voice conveys, in contrast, a wry upturned smile.

Figure 4: measure 65 - 67: "make an example of me"

By keeping the intonations varied, Davis keeps the listener off guard. The statement "I'm a communist" is a recurrent theme and arrives each time prominently in the talk, as if to inure the listener to the impact of the word "communist" in conjunction with her being a "black woman." Each time Davis asserts her belief in

¹² The vocal fry in "woman" doesn't actually have enough amplitude to alter the transcribed pitch. Most of the subsequent occurrences of this vocal inflection do however.

communism there is a very different intonation, which works to give the concept a sense of variety rather than simply hammering it in over and again. She thereby counters the pedantic or totalitarian overtones that might instantly be associated with "communist" by intonating the word floridly in her speech (see fig. 5).

In the first instance of the word "communist" in measure 6 ("I am a communist because I am convinced...") it spans a minor sixth and begins in Davis's highest register on an F#. The second time it occurs ("I am a communist because I believe..." measure 24,) it occurs lower (on a high C) and is surrounded by relatively high tones in Davis's voice spanning a fourth. The third time that the word occurs ("further I am a communist because I believe..." measure 32,) it is slightly lower still on a B and A#. The last time Angela Davis says "communist" it occurs repeated twice (measure 76) and summarizes the movement of all the occurrences by starting in the high register (high E and F) and falling to the lowest instance yet of the word on an F# and E in the middle-low register. This span of an octave gives this last instance a sense of finality and assurance. Ablinger sets the first and third instances (measures 6 and 32) of the word "communist", with a monophonic leaping figure and then a minor second, respectively. The second and fourth examples (measures 24 and 76) are both set with choral material but first with straight quarter note chords whose left hand stays quite steady and in the next instance with syncopated chords which leap octaves twice. To summate, the principle of maximum variety conveyed in the vocal projections of the word is confirmed by Ablinger's musical realization on one level, but on another level, the statements receive a homogenized treatment by conforming to the strictures of the two textures.

Figure 5:
measures 6, 24, 32 and 76:
"communist"

Oppositional concepts trigger a particular troubling of the musical/spoken intonations. Ablinger shows how Davis reintroduces the idea of opposing concepts at every turn by having edited together audio excerpts for the composition wherein Angela Davis seems to employ as many binary terms as possible. The list includes

“imprisoned”, “enslaved”, “oppression”, “compelled”, “coerced”, “suppressed”, “forced” etc. The word “repression” is the apex of these and also their culmination. Angela Davis’s strategy for re-channeling this net of injustice into positive energy is by intoning the terms of resistance, and often one other proximate word, with more tonal emphasis via pitch height and steady glissando movement than on the words for injustice, which are spoken matter-of-factly. By this tonal contrast Davis establishes the injustice of the situation as a given, as the ground, while reiterating the need to act, over and over again. “Struggle” is the first of such words (which include “destroy”, “obliterate”, “refuse”, “rise” etc.) that imply the conversion of positive energy from injustice to resistance (see fig. 6a,b).

The first time “struggle” is mentioned, in measure 3, it is the first instance of the note A# in the voice as well as in the piece and, doubled at the octave with the piano it receives a special emphasis. In contrast to all of the sentences that come before, almost all of Davis’s sentences start ending at a certain point with a strong and pointed downward glissando, generally indicating a more heightened emotional intonation; this new tone begins in measure 40 (an extended monophonic section) with “I’m in prison” and ends in measure 75; here the word “struggle” concludes two sentences, including the final one, with a particularly conspicuous glissando. In the second instance of “struggle” the piano plays a half step down, approximating the vocal motion. The third instance of the piano setting however is highly divergent, playing only a punctuated pair of repeated high Ds where in fact there is actually a very quick glissando over the interval of a whole tenth in the voice. The dryness of these pointillistic piano projections, accented, but terse by contrast, make the passion of the spoken delivery of the word “struggle” even more apparent. The discrepancy of the piano part to various focal points on words of resistance throughout the piece always reduces at the same time that it celebrates. Through that reduction a semblance of a musical whole is procured to the listener, which is simultaneously and continually tonally punctured.

Figure 6a:
measure 3: “struggle”

Figure 6b: measures 62 and 75: “struggle”

As Ablinger reveals the music of these speech intonations we not only better appreciate the virtuosity of the speaker in this regard, but we also come to hear better explicitly how these intonations would not only be impossible purely through music but also how their power as sound is differentiated from music. A lattice of tones, microtonal or not, make a network of associations and remembrances whose associations are especially promiscuous for infinite permutation and affects, while the continuum of tone in speech is far more malleable for the imprint of the emotions of cognitive dissonance, which are also infinite but more specific to very particular behavioral choices. Although speech intonations naturally share certain qualities with conventional forms of musical vocal production, they are honed specifically to avoid being re-interpolated into a permutable matrix and thereby absorbed into the nervous system so sympathetically. Speech intonation rather is generally aimed at a specific point or concept in the world, and usually only that one, at a time. We know this to be true, but how often are these differences perceptible in the same phenomenon simultaneously? Ablinger causes a rare confrontation by enabling the audibility of these differences in one composition. The listener’s response at first listening to the cognitive dissonance aroused by the piece’s construction may be to cancel out this dissonance by reducing the importance of either music or text to the artistic statement of the piece in their estimation, or to entirely suppress the conflict; the interdependence on each other, and yet rejection of one by the other of the music and speech remains a fact however. Different listeners will be forced to disagree depending on how they listened. The piece is a forum for agonistic listening.

In any case, the way our thoughts are influenced has to do with our need to stand out and/or to belong, to fight for justice in society through sonic expression. Ablinger takes these impulses apart from the inside of human vocal intonation.

The disparity of proper unity or separation of the sounds leaves the listener in an important quandary. In his compositional methodology using music in a collision with other sound media, Ablinger originates a separation between music as an agent to draw out polyphony of differing viewpoints, perspectives and even beliefs within the listener, in opposition to the conventional conception of musical sound, which can be experienced without precipitating this form of cognitive dissonance, or in which cognitive dissonance is reportedly cancelled as in the research of Perlovsky et al.

The sounds of the body in its mode of communication and expressivity during speech possess musical features. The concatenation of this form of sound with a musical doppelgänger on the piano in *Voices and Piano* is inescapably a moment of theater. The subject of this theater however is largely the listener instead of composer and/or performer. Peter Ablinger in this way provides an argument through his compositions for assigning greater importance to a musical way of hearing speech as a crucial step for the freedom of the individual. Every phrase by any orator entails the expectation that their words will be replayed in the listeners mind. Ablinger shows that by even choosing to hear music rather than speech we make a choice with highly political consequences. Through the extra substance Ablinger lends to the sound of the vocal intonations in the form of music, we can get a better hold in our imaginations of the intonations in order to better understand how they might be getting a hold of us. Angela Davis's intonations are not music. It is only music that 'tells' us with authority exactly how they are, or are not musical.

It is in many ways only those compositions wherein 'non-musical' sound is harbored within the work, that allow us to understand how music offers us a new sort of freedom. During the changed tonalities Ablinger provides us in his composition, we can enjoy Angela Davis's voice as 'voice'. This is a transformation that glorifies, but also strips bare the act of utterance and not any particular political platform behind it. It eulogizes and exposes the human sonic responses to her needs and not their political uses. When these urges are refined down to their sonic essence it offers us the glimmer of a chance to reinvent the "system" and our entire habitus with a new compassion and imagination, which can help us better attain revolutionary goals in ways that have yet to be imagined and invented. Ways that overwhelm the oppositional by re-inventing the context.

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