The following notes were written for a San Diego New Music concert (March 17th, 2025), which I curated. The program featured a premiere of a solo cello work by Adam Zuckerman (shade , illumination) and the Duets by Tashi Wada, which I performed with Charles Curtis

Preface

To this day, one of my most profound experiences with art remains to be my first encounter with an exhibition of works by *dansaekhwa* artists at the Institute of Contemporary Art in Boston. *Dansaekhwa* (translating to “monochrome painting”) refers to a rather loose, retroactive grouping of South Korean artists who emerged out of the 1950s-70s, whose work can be characterized by its non-figurative and abstract nature, the distilled set of tones employed, and an unyielding focus on process and materiality. It was not like that was my first encounter with abstract art of that nature–yet, there was something about the nature of these works that had moved me particularly so…

One of my primary interests as a musical artist fixates on the *materiality* of the instrument, of sound itself. Although not entirely mutually exclusive, one could think of this in contrast to an *idealist* approach to music, which involves a relatively rigid organization of musical parameters to create a certain idealized “sound image”, in accordance with some kind of organizing system–often, certain realities of the instrument are to be surreptitiously masked in order to maximize the effect of transporting the listener into the intended soundscape, of narrative, of *fantasy*. It is not necessarily the case that the material realities of the instrument are completely disregarded in this scenario, but it is almost always subsumed, treated as a means to an end in conveying an “idea” of music. It is a sort of music-making that I have a deep love and history with, so by no means am I denigrating this sort of paradigm … but to have music that tries to deal with the materiality of the instrument and sound directly, honestly, with little to no “added-value”, is a kind of art that I find deeply enriching and poignant.

At first glance, the works featured in this program are extremely simple in nature, at least on paper; Adam’s piece features “just” four notes, while Tashi’s duets are “just” four glissandi sweeps. Yet, it is only through this distillation that the materiality of the instrument and the sounds come to the fore of perceptual focus. We are collectively invited to “listen” in more sensitively and deeply, to discover the richness and complexity inherent in the material, as gradualness, just noticeable difference, *inframince* become central to the experientiality.

shade , illumination

shade , illumination (2025), by Adam Zuckerman, is a work for solo cello, commissioned by San Diego New Music for this program. Of the work, Adam writes:

> *shade , illumination* explores the internal dynamics of four nodal points of the cello's lowest strings. Unfolding through a gradual process of self-disclosure, these nodes are scanned through a fluctuating patterning of pressures, revealing the presence of a polyphony of fragile shades and textures within what initially appears as a monophonic, singular point.

A quick primer on some technical ideas regarding sound and strings: in most cases, when a pitch is sounded, we often perceive a single entity of one note–however, within that note, is a series of *overtones*, with the lowest frequency being the *fundamental*, and a series of higher pitches that emanate out in a consistent pattern, which we think of as the overtones. This in large part defines the *timbre*, the *sound color* of an instrument–brass instruments are often rich in overtones, while clarinets are missing certain overtones, giving it its more "melancholic" sound. However, we don't normally perceive these sounds with their overtones as being particularly delineated due to the way these pitches are "balanced"--think of how a pianist can balance a chord such that a 4-note chord blends into a single entity.

Partials are then the term we use to refer to specific parts of the overtone spectrum–the 2nd partial sounds an octave above the fundamental, the 3rd partial an octave plus a fifth, the 4th partial two octaves above, etc. This theoretically goes out into infinity, well beyond the limitations of human hearing. *Harmonics* on a string instrument then refers to the manipulation of the string such that it isolates a particular partial, often by lightly touching a precise point of a string.

We can consider the idea of a *nodal point* as a precise location of the string, one that either yields a pitched sound rich with overtones with full left hand *finger pressure*, or that of a specific harmonic with the lightest of touch. These four nodal points are fixated in particular on the *13th partial* of the two lower strings, which sound as a quarter-tone sharp minor 6th in relation to the fundamental (A and E quarter-tone flat in relation to the C and G string, respectively). One can find the 13th partial by splitting the string into 13 equal parts–this principle extends to any harmonic, and thus theoretically there is an infinite number of harmonics possible at any point of the string, although in practice this is not quite the case due to material limitations and inharmonicity of the string. The 13th partial in particular is delicate and fragile in its nature, often neighboring much stronger harmonics like that of the 2nd and 3rd partial.

We located two spots on each string for the 13th partial, resulting in four nodal points: with full finger pressure, on the C string it would result in a slightly raised F# and a slightly lowered B. On the G string, a slightly raised C# and a slightly lowered F#. When played as a dyad, with full finger pressure, it would result in either a slightly narrow octave, or a slightly wide major 2nd–a mirrored relationship between the two strings.

The nature of changing finger pressure became an interesting process of discovery throughout our work on this piece. It would turn out that gradually adding finger pressure would result in more of the fundamental pitch of that nodal point becoming prominent–and that it was also possible to keep the harmonic ringing throughout this fluctuating pressure. Sometimes, other nearby harmonics would ring in the process, perhaps due to the oscillating nature of the string catching these nearby nodal points. When played softly enough, one could hear the fundamental of the open string pitch in addition to whichever harmonic node was being activated. This would reveal a gentle polyphony of the string, one that would typically be masked from our perception of what we think of as an otherwise singular sound.

Contact point, the point at which the bow meets the string in relation to the bridge and fingerboard, became another key element of exploration, particularly with the areas closer or above the fingerboard. The closer one gets to the bridge, the stiffer the tension of the string becomes–this is ideal for creating brighter, more focused sounds, and stability of pitch. The inverse is true, that as we come away from the bridge, the more flexible the string becomes in nature. One byproduct of bowing at a contact point closer to the fingerboard is that the string inherently vibrates at a wider ambitus—this fact, in conjunction with the fluctuating finger pressure, would exacerbate the particularly delicate and fragile state of the sound. Sometimes, as finger pressure would be added, the partial would suddenly "jump" to a neighboring harmonic–as it would turn out, the addition of pressure would lengthen the string in small but significant amounts, especially when compounded with the wider vibratory cycles, as some of these harmonics are only millimeters apart from each other.

For reasons that are still mysterious to me, there are some contact points where certain harmonics are completely absent, and others where the opposite is very much true. The 13th partial thus serves as the "north star" for the piece, an orientation point that the cellist seeks throughout the gradual fluctuation of pressures and placement. At times, the 13th partial remains faint, shadowy, hidden within the resonances of the fundamental pitches, stronger neighboring harmonics, and noise. At other points, as certain conditions align, the 13th partial shines through, illuminated.

As we worked out this piece, the subject of Rothko's work became a point of interest and inspiration, particularly that of the *Rothko Chapel*, with how one's perceptual experience of the installation would transform as the light and atmospheric conditions would gradually change in every passing moment. The idea of gradually changing finger pressure and contact point then became a sort of analogue to this idea of fluctuating atmospheric conditions, in revealing certain aural and material properties of the instrument localized within each point.

Duets

Duets (2006-2008), by Tashi Wada, are a set of four duets for two stringed instruments (originally premiered with two violinists), involving a two-octave *glissando* for each duet. The instructions are as follows:

September 2006
"The players descend in unison very slowly."

March 2007
"The players descend in unison very slowly, plucking tones together at a regular interval of time."

April 2007
"The players descend in unison very slowly, matching the harmonics as they sound."

February 2008
"The players descend in unison very slowly, always upholding the present relationship which varies each moment."

Unison, *descend*, and *very slowly* are the key words here that merit some further elaboration. In regards to unison, the unison of pitch is a central concern throughout these duets. Pitch can be seen as the means through which two separate (yet highly similar) bodies can achieve a perceptual melding together, a unity in which the fusion of sounds results in us perceiving a singular entity.

However with the sustain of pitch, slight misalignments between the two celli are manifested through *acoustical beating*, interference patterns that emerge between the sound waves. The consistency of pitch is also complicated by certain material realities of the instrument–such as the disruption of the bow change as the string's oscillation abruptly changes in phase, or the very slight difference of pitch brought about by the gradual difference of bow pressure throughout the sustain. Staying in tune is not simply a given once aligned, but is an act that must be constantly maintained and adjusted for at every moment–it is a highly demanding task by itself, requiring very close attention and a consideration of nearly all facets involved in activating the instrument.

In many musical situations, some of the issues outlined above can be seen as fringe concerns. While pitch and tuning is important, often it simply has to just be "good enough" to not distract from what the music is otherwise trying to convey, with its varied rhythms, dynamics, expressive markings, and so on so forth. Here, such elements are excised away–a singular gesture remains–and what remains is the material of the sound itself as the central focus, the nature of tuning and process of navigating it becoming tantamount to the experience of this music.

Descent then adds further complications; as the two players try to maintain a unity of pitch, so too must they strive to achieve synchronicity in the trajectory down the two-octave sweep. Constant adjustment is required by both players in order to maintain unity in the sound. *Very slowly* then provides a frame of pacing in which we are all invited to zero in, to listen more carefully, to realize the phenomenon as it unfolds at every moment. As both players navigate through the two octave sweep, the acoustics of the room and instruments themselves are revealed to an extent–certain frequencies will radiate in its resonance, while others will seem relatively muted, masked.

The following duets build upon this initial premise; the second duet *March 2007* accomplishes the gesture through *pizzicati*, plucked tones at regular intervals, rather than sustained bowed pitch. Here, the focus on unity takes on a slightly different dimension–while pitch remains a central concern, the simultaneity of attack becomes a highly salient feature. As the plucked gesture repeats itself, we are invited to perceive more closely the relationship between the two plucked onsets, the tiniest differences in attack, in resonance, in decay, and in timbre.

April 2007, the third duet, is markedly different in that it descends across the entirety of one string (the G string, in this case), using only the lightest of touch with the finger to activate the *harmonics* of the string. The result in this case is that while the physical motion of descent is continuous, what we hear in terms of pitch is quite discontinuous, as the pitch jumps around to the different harmonic nodes that are activated in this descent. With such a slow rate of descent, the finger will sometimes catch itself between multiple harmonic nodes, resulting in a beautifully complex multiphonic. At other points, the sound will seemingly linger on single prominent harmonics, one that are so resonant that they seem to occupy a larger space of the string relative to the other partials. As the descent reaches the middle point of the string, the second partial rings out, one octave from the fundamental G–from this point on, the harmonics that are activated should largely play out in reverse, a near symmetrical mirroring dictated by the material nature of the string itself.

The final duet, *February 2008*, returns back to the premise of the first duet, with an additional directive to “...always [uphold] the present relationship which varies each moment.” Unlike the previous duets, where the objective is to hone in ever-diminishing differences towards an infinitesimal degree, it instead acknowledges these tiny differences, and asks for the performers to maintain said difference at each and every moment. Of which Charles Curtis writes:

> First of all, this instruction seems to tacitly acknowledge that the relationship is not exactly unison. And whether a relationship can be considered “present” which “varies each moment” becomes an issue when one is asked to "uphold" that relationship. Which one? At which moment? We are told that it will change moment to moment, yet still are asked to uphold something. We are upholding something that cannot be held.
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> The drawing of a bow across a string is in a sense a materialization of elapsing time. The positing of a "present relationship which varies each moment" seems to frame a preoccupation with the present,

> independent of prior and subsequent time markers. How far can we enter into a single moment, such that for that brief speck of time, for an instant, unison is registered? This would suggest a different sense of unison, as a state of complete integration hidden behind the disparity and change caused by the passing of time.
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> *-From the liner notes of the Tashi Wada Duets LP (2014)*

For the performers, this difference is manifested and tracked through the rate of *acoustical beating* that is perceived between the two tones. Maintaining difference within such a narrow space becomes a highly complicated task, as the most prominent acoustical beats can change depending on the region of the instrument, and are precariously affected by the unavoidable fluctuations of the bow and slight changes of descent trajectory.

According to the *critical band theory*, there is a liminal space in which we perceive the two tones as indistinct from one another, while still hearing these acoustical beats manifest. The notion of *unison* is complicated and questioned by this duet to a particular degree–for myself, there was this realization that we perceive unison not necessarily as a singular ideal point, but rather as a very narrow range of variance that we subconsciously round off. At what point does a unison stop being a unison? It is something that varies from person to person, from moment to moment–we complete the artwork as we observe it, realized only in the reality of the performance as the sounds manifest.

-program notes written by Peter Ko