# I Mean You No Harm 

by
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A composition submitted in partial fulfillment of the requirements for the degree of Doctor of Musical Arts (Music: Composition) in the University of Michigan (2021)

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## DEDICATION

Kol Han'shama, for all people after immense suffering.

## ACKNOWLEDGEMENTS

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Thanks to my parents who, through physical, mental, and financial hardships, strove and worked for me to receive the highest quality of education possible. This dissertation work is as much yours as it is mine. With this final project and capstone as a student, I hope I have made you proud.

## TABLE OF CONTENTS

DEDICATION ..... ii
ACKNOWLEDGEMENTS ..... iii
LIST OF FIGURES ..... V
DURATION, INSTRUMENTATION, AND ..... vi
PERFORMANCE NOTES
ABSTRACT ..... xii
SCORE ..... 1
BIBLIOGRAPHY ..... 33

## LIST OF FIGURES

1. Instrumentalist spatialization ..... vii
2. E-Bow switch placement ..... viii
3. Electronic set-up for electric guitar ..... ix
4. Max/MSP Patch ..... x

## DURATION, INSTRUMENTATION, AND PERFORMANCE NOTES

## Duration:

c. 43 '30" $-44^{\prime}$ '0o"

## Instrumentation:

1 Clarinet in A
1 Alto Saxophone (dbl. Singing Bowls)*
1 Percussion
vibraphone (with mallets, bow, and motor)
crotales (both octaves)
*Singing Bowls (with rubber mallet and felt tube mallet, pitches C4, D4, E4, F4, G4, A4, B4)*

1 Harp
1 Piano - (with two E-Bows: see performance notes \#6, fig \#2)
1 Electric guitar - (with live digital signal processing: see performance notes \#7, figs \#3 and \#4)
1 Viola
1 Cello
1 Double Bass - (with C-extension)
1 Soprano vocalist - (range: C4 - E 5 )
1 Alto vocalist - (range: F3-B4)
1 Tenor vocalist - (sounding range: C\#3-E4 -- written range: C\#4-E5)
1 Bass vocalist - (range: G2-C\#4)
*(Please contact the composer at composer72o@gmail.com to acquire or borrow the proper singing bowls for performance.)

## Performance Notes:

1. General setup and spatial layout for performance:

An individual or small collection of instruments will be spatialized throughout a performance space and placed in groupings based on timbres and tunings required for performance. The spatialization of the performers lends the opportunity to re-figure the role of the "audience" or "concert-goer" as that of "meditator/participant" with agency over individual experience. Each individual has the freedom to discover which individual performer or group of timbres generated by the ensemble resonate best within them, and to move freely throughout the space.Tunings of $\mathrm{A}_{4}=440 \mathrm{~Hz}$ and $\mathrm{A}_{4}=432 \mathrm{~Hz}$ (and all equally tempered pitches with each system) will be adhered to to create a binaural listening experience. The groupings and tunings are as follows:


Figure 1: Instrumentalist Spatialization

## 2. Governing time and cues:

Communication is critical and imperative for this work. All performers should be facing inward to ensure and enhance communication. No conductor is needed for performance; all performers cue each other throughout any given performance. Be sure that no views from one performer to another are obstructed for extended periods of time as audience members will be moving around throughout the performance space.

In order to successfully perform I mean you no harm, each performer must have their own timer, stopwatch, or any similar device. If one uses a computer, tablet, or cellular device for their timer, please put the device in "Airplane Mode" to ensure no calls or messages are received during performance. It is also essential that the device must not power off, vibrate, or enter a "sleep mode" of any sort during performance. The pianist should supervise the synchronization of stopwatches by ensuring all are ready to simultaneously activate their stopwatch and by properly cueing the ensemble for the start of the stopwatches and the piece itself.
A highly recommended online option/alternative for a synchronized stopwatch is https://chronograph.io/, a cloud-synchronized stopwatch. If this route is chosen, the pianist
should arrange and control the stopwatch from their device, distribute the "view" link found at the bottom of the website to the ensemble, conduct a test run with the ensemble, then use for performance.

When sonic events happen simultaneously, they are marked with red arrows. The arrowheads themselves point to and indicate the performer who acts as the signaler/"cuer" of that sonic event for when they should specifically occur.

In the score, there are two or three timestamps per page of music. For timestamps not at the end of a page, they serve as guides/markers as to what music should approximately be occurring at that given time. A ten (10) second window is acceptable when approaching and retreating those timestamps. The timestamp at the end of each page, as indicated by its attached small arrow, corresponds specifically to the end of that page of music. The timeframe of this timestamp must be strictly adhered to. Overall, it is crucial for all performers to be aware of what music is occurring at the end of any given page and immediately at the start of the subsequent page. This will assure that all performers are, literally and figuratively, on the same page.

## 3. Playing the Himalayan singing bowls:

There are two ways to play the Himalayan singing bowls: by gently striking them with the round rubber mallet, or by "singing" them with the felt tube mallet. For more detailed explanation and instruction, consult this video: https://youtu.be/NiP7-DrZoiQ

## 4. Vibraphone mallets:

When 'soft' mallets for the vibraphone are requested, this indicates that the sound of contact of the mallets on the vibraphone should be as close to inaudible as possible.

## 5. Harp harmonics:

Harmonics are notated where played with the ${ }^{\circ}$ symbol. They should sound one octave higher than written.

## 6. The piano, and using the E-Bows:

The lid for the piano should be full-stick and the (damper) pedal should be down for the full duration of the work. The pianist may use their foot in a standard manner or place an object onto the pedal.

The E-Bow, or electronic bow, functions as a digital bow to create a droning effect. Although E-Bows are monophonic, they can produce overtone pitches as the primary sounding pitch depending on the vertical placement and function of the E-Bow on the string. For I mean you no harm, the E-Bow should sound the pitches notated in the score as the primary sounding pitch (naturally occurring overtones/harmonics are expected and desired for performance, although try to avoid the faint $7^{\text {th }}$ and $14^{\text {th }}$ partials). If the "on" switch is facing you (and the nose and LED light are facing away from you), flip the switch to "standard" to the left to ensure proper pitches are sounded.


Figure 2: E-Bow switch placement

Before performance, test the E-Bows on the piano and place sticky-notes onto the soundboard to properly ensure the correct placement of the E-Bows during performance. The four total pitches utilizing the E-Bows are D4 and A4 followed by F4 and C5. For a more detailed explanation and instruction, consult this video by Nina C. Young: https://youtu.be/PSufBIHeg2I

## 7. Electronics/digital signal processing for the guitar:

The timbral quality and musical color of the electric guitar throughout the work should be warm and mellow, but rich and bright.

The electric guitar must employ reverb, distortion, and delay for performance. Below is a diagram for electronics setup (many thanks to Josh Alvarez Mastel for his assistance with the electronics).


Figure 3: Electronic set-up for electric guitar

A screenshot of the Max/MSP patch, created by John Mallia, is below. It is available for performance at the following link:
https://drive.google.com/file/d/1ueqonW3fEytmrtw37WhWc1uxfX2S46Uw/view?usp=sharing


Figure 4: Max/MSP Patch

Everything should already be set up properly in the downloadable patch, but in the event it is not, check the instructions below to confirm that the patch is ready for use.

Step 1: Click the large microphone button in the top left-hand corner.
Step 2: Select input source (the audio interface).
Step 3: In DELAY, adjust the five "delay times" (which in the above image all read "o") to mirror the "tapout $\sim$ " bar just below them by clicking the arrows on the left hand side of each box and typing the numbers in (333, 750, 1100, 1950, 2450).
Step 4: Adjust each individual delay fader (the five equal faders all currently reading 127) to mirror the numbers directly above it $(127,124,110,124,110)$ by clicking each of those boxes. The boxes below the faders and the faders themselves will automatically adjust.
Step 5: Adjust universal input (Fader 1) and universal output (Fader 2) accordingly. To turn delay off, turn both input and output faders completely down.

Step 6: In REVERB, adjust your "preset \#" to " 3 " (as shown above).
Step 7: Adjust universal input (Fader 7) and universal output (Fader 8) accordingly.
Step 8: In DISTORTION, adjust your "preset \#" to " 3 " (as shown above).
Step 9: Adjust universal output (Fader 3) accordingly. To turn distortion off, turn the fader completely down.

## 8. Harmonics (for strings and guitar):

All harmonics (unless noted otherwise) are natural harmonics. They are notated either as diamond noteheads at the node/touchpoint on the corresponding string they are played on (noted as I, II, III, or IV), or at sounding pitch with the $\circ$ symbol written above it.
There are five (5) different natural harmonics used:

1. If the node/touchpoint is a perfect fourth above the fundamental/open string, the sounding pitch will be two octaves above the fundamental/open string, or the $4^{\text {th }}$ partial.
2. If the node/touchpoint is a perfect fifth above the fundamental/open string, the sounding pitch will be a $\underline{12}^{\text {th }}$ (or an octave + a perfect fifth) above the fundamental/open string, or the $3^{\text {th }}$ partial. 3 . If the node/touchpoint is a major sixth above the fundamental/open string, the sounding pitch will be a two octaves + a major 3rd above the fundamental/open string, or the $5^{\text {th }}$ partial. 4. If the node/touchpoint is a minor seventh above the fundamental/open string, the sounding pitch will be atwo octaves + a 31-cent flat minor seventh above the fundamental/open string, or the $7^{\text {th }}$ partial. It is acceptable for the resulting sound to be scratchy or fuzzy.
3. If the node-touchpoint is an octave above the fundamental/open string, the sounding pitch will be an octave (same as the written pitch) above the fundamental/open string, or the $\mathbf{2}^{\text {nd }}$ partial.
4. The singers:

The singers sing two vowel sounds throughout the work:
コ, or the "open-mid back rounded" vowel, as in "ball" or "thought" (in North American English).
$\mathbf{a}$, or the "open back unrounded" vowel, as in "hot" or "stop" (in North American English).
These vowel sounds should be completely uniform amid the singers. Any specific vocal/timbral details regarding these vowel sounds should be unanimously agreed upon by all four singers. The timbre and color of the voices should blend as fluidly with the rest of the ensemble as possible.
10. On non-standard and aleatoric notations/performance techniques:

There are detailed instructions for all non-standard and aleatoric notations in the score. If there are any questions regarding these techniques, please contact the composer directly.

## 11. Dynamics:

Any two dynamics separated by an arrow, for example, ${ }^{(\boldsymbol{m p} \boldsymbol{p} \boldsymbol{f})}$, indicate a range of dynamics. In the above example, the performer may freely perform within a dynamic range of (and any dynamic in between) mezzo-piano to forte.
${ }^{m f}$, or mezzo-forte, should approximately match the sound of a speaking voice at normal volume. All other dynamics are proportionally derived from this.

```
~}=\mathrm{ crescendo dal niente (crescendo from silence)
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$\longrightarrow=$ decrescendo al niente (decrescendo to silence)
Any dashed crescendo or decrescendo markings, such as $\circ======-\sim_{\circ}$ indicate natural attacks and decays (fade-ins and fade-outs) of sound, such as the fade-in from the placement of the E-Bow on the piano strings, or the fade-out from the ceasing of bowing the vibraphone, etc.


#### Abstract

I mean you no harm is a work for mixed chamber ensemble (cl, asax, perc, hp, pno, gtr, vla, $v l c, d b, S A T B$ choir) composed with the intent of alleviating stress and down-regulating the sympathetic nervous system based on studies and research at the intersection of music, neurology, and meditation and healing. In this work, I focus on utilizing and applying proven techniques for healing such as binaural beating and auditory entrainment while amplifying the healing power of extra-musical experiences such as those available to us in the natural world and in mystical and spiritual practices such as Kabbalah and meditation. I attempt to accomplish this by means of the use of timbre, pulse, atmosphere, and the manipulation of the overtone series to create a meditative and healing sonic space.

Some of the Jewish teachings I have embraced since my childhood, such as caring for and loving the earth and performing acts of loving-kindness, are exemplified in the teachings and actions of Kabbalah and those who practice it. One of the fundamental questions of Kabbalah is how can we each properly attune ourselves to the earth, to Havayah (the Great Existence), to the S'firot (emanations of Havayah between the physical and metaphysical realms), and to each other. While the answers lay deeply within each of us and scattered throughout the universe, I aspire that this work might help us each attune to each other, to the depths of the universe, and to our own selves.

While the "standard" unit of time measurement in a piece of classical music is beats per minute within a given time signature, the unit of time measurement in this work is in seconds as dictated by synchronous stopwatches for each performer in the ensemble. The work is to be performed sans conductor; each sonic event will act as a cue for the subsequent sound in the score.

The performers are to be distanced and spatialized in individual groupings within the physical space for performance by instrument family. This lends the opportunity to re-figure the role of "concert-goer" as that of "meditator/participant" with agency over individual experience. Each individual has the freedom to discover which individual performer or group of timbres generated by the ensemble resonate best within them, and to move freely throughout the space. It is my utmost hope that in treacherous times of uncertainty or any perilous moments we may endure in the future, that this work be a catharsis and a release for anyone who participates, meditates, or listens.


## I mean you no harm

SCORE IN C
for mixed chamber ensemble

## c. $30^{\prime \prime}$ <br> c. $1^{\prime}$ <br> calm and steady

$1^{\prime} 30^{\prime \prime}-1^{\prime} 40^{\prime \prime}$




c. $7^{\prime} 10^{\prime \prime}$
c. $7^{\prime} 40^{\prime \prime}$
$8^{\prime} 15^{\prime \prime}-8^{\prime} 25^{\prime \prime}$
irregular rhythmic tremolo, fidgety and twitchy, like morse code, breathe when necessary.

c. $9^{1}$
c. 9'35'

10'-10'15'


c. $\mathbf{1 2}^{\prime} \mathbf{3 0}^{\prime \prime}$











c. 26'30"
c. $\mathbf{2 6}^{\prime} 50^{\prime \prime}$
27'05"'27'15"









c. $37^{\prime} 15^{\prime \prime}$
c. $37^{\prime} 35^{\prime \prime}$

37'55"-38'







## BIBLIOGRAPHY

"About Us." The Center For Deep Listening, www.deeplistening.rpi.edu/about-us/.
Akimoto, Kaho \& Hu, Ailing \& Yamaguchi, Takuji \& Kobayashi, Hiroyuki. (2018). Effect of 528 Hz Music on the Endocrine System and Autonomic Nervous System. Health. 10.11591170.10.4236/health.2018.109088.

Aravena, Pedro Christian, Almonacid, Camila, \& Mancilla, Marcelo Ignacio. (2020). Effect of music at 432 Hz and 440 Hz on dental anxiety and salivary cortisol levels in patients undergoing tooth extraction: a randomized clinical trial. Journal of Applied Oral Science, 28, e20190601. https://doi.org/10.1590/1678-7757-2019-0601
Baird, Amee, et al. Music and Dementia: From Cognition to Therapy, New York: Oxford University Press (2019)
Beaulieu, John, Music and Sound in the Healing Arts, Barrytown: Station Hill (1987)
The Bioregulatory Medicine Institute. "Frequency Therapy in Music." Bioregulatory Medicine | BRMI Bioregulatory Medicine Institute, 7 Feb. 2020, www.brmi.online/post/2019/09/25/frequency-therapy-in-music.
Bonny, Helen L./Savary, Louis M., Music \& Your Mind: Listening with a New Consciousness, Barrytown: Station Hill (1990)
Bush, Carol A., Healing Imagery and Music: Pathways to the Inner Self, Portland: Rudra Press (1995)

Calamassi, Diletta, and Gian Paolo Pomponi. "Music Tuned to 440 Hz Versus 432 Hz and the Health Effects: A Double-Blind Cross-over Pilot Study." Science Direct, Elsevier, 6 Apr. 2019, www.sciencedirect.com/science/article/abs/pii/S1550830718302763.
"Creators of Rhythmic Entrainment Intervention." Strong Institute, www.stronginstitute.com/. Eno, Brian. Liner Notes. Ambient 1: Music for Airports, Polydor, 1978. LP
Garfield, Leah Maggie, Sound Medicine: Healing with Music, Voice and Song, Berkeley: Celestial Arts (1987)
Goldman, Jonathan. "Experience the Power of Sound Healing." Healingsounds.com, 20 June 2020, www.healingsounds.com/.
Goldman, Jonathan, Healing Sounds: The Power of Harmonics, Rockport MA: Element (1992)
Gouk, Penelope, et al. The Routledge Companion to Music, Mind and Well-Being. Routledge (2019)
Halpern, Steven, Sound Health: The Music and Sounds That Make Us Whole, San Francisco: Harper and Row (1985)
Institute for Music and Neurologic Function - Mount Vernon, NY - Home, www.imnf.org/.
Naghdi, Lili et al. "The effect of low-frequency sound stimulation on patients with fibromyalgia: a clinical study." Pain research \& management vol. 20,1 (2015): e21-7. doi:10.1155/2015/375174
Oliveros, Pauline. Deep Listening: a Composer's Sound Practice, IUniverse, Inc. (2005)
Pictures, True Form. "INSIDE THE PERFECT CIRCLE: The Odyssey of Joel Thome." Vimeo, 25 Oct. 2020, vimeo.com $/ 367346125$.
Prendergast, Mark J. The Ambient Century: from Mahler to Moby - the Evolution of Sound in the Electronic Age. Bloomsbury (2003)
Stevens, Christine. Music Medicine : The Science and Spirit of Healing Yourself with Sound. Sounds True, 2012.
Sussman, Ari. "Interview with Dr. Concetta Tomaino, Executive Director of the Institute for Music and Neurologic Function." 6 Nov. 2020.

Sussman, Ari. "Interview of Jeff Strong, Creator of Rhythmic Entrainment Inervention." 22 Mar. 2021.

Thaut, Michael H., et al. "Neurobiological Foundations of Neurologic Music Therapy: Rhythmic Entrainment and the Motor System." Frontiers, Frontiers, 29 Sept. 2014, www.frontiersin.org/articles/10.3389/fpsyg.2014.01185/full.

