

Song-Ming Ang  
Julien Grossmann

DUSK  
TO  
DAWN  
CHORUSES

**Dusk to Dawn Choruses** is Song-Ming Ang and Julien Grossmann's research into the various forms and definitions of the chorus. From the ancient Greek chorus to modern telecommunications companies (Chorus Limited), and from morning birdsongs (dawn choruses) to the humming of Chorus Motors (Borealis Exploration), the project is a musical journey into what a chorus could be. The program features a range of musical experiments based on instructional scores and compositions in which the voice occupies a central place.

Supported By:



**Dawn Chorus (Birds)**

**Threshold Piece**

**Chorus Limited**

**Yes-No Piece**

**Hyundai Chorus**

**Counting Piece**

**Chorus Gray**

**Mobile Piece**

**Chorus Intelligence**

**Shepard Piece**

**Dawn Chorus (Fishes)**

### **Dawn Chorus**

Performers imitate a dawn chorus, whistling like birds do at dawn. (Performers who cannot whistle may imitate the sound of a bird vocally.)

The performers should think of what a voice in a dawn chorus sounds like, and attempt to replicate it as closely as possible.

The performers shall not discuss when the piece starts, nor when the piece ends. They should walk freely around the performing space.

## Threshold Piece

Standing in a circle facing each other, performers should attempt to reach three notes - the highest note of their vocal register, followed by the lowest note of their vocal register, and then the breaking point between their modal voice and falsetto.

The performers should begin each note together, and hold each note for as long as their breath allows. They should take a deep breath between each note.



Whistling 1

Whistling 2

(A)

(B)

Jingle Voie 1

Cho- rus li- mi- ted Cho- rus li- mi- ted

Jingle Voie 2

Cho- rus li- mi- ted Cho- rus li- mi- ted

Jingle Voie 3

Bass Line 1

Bass Line 2

1 5 9 13 17 21 25 29 33 37 41 45 49

w h i s t l i n g w h i s t l i n g w h i s t l i n g w h i s t l i n g

A B A A B A B A B A B A B A B

Bass Line 1

Bass Line 2

Chorus Limited\* is a piece of music based on a syncopated duet of whistling, on which a brief jingle is intermittently sung, and finally supported by a line of bass.

\* Chorus Limited is also a provider of telecommunications infrastructure throughout New Zealand.

### Yes/No Piece

Performers shake their heads while saying 'yes', and nod their heads while saying 'no'. They may say the words as many times as they like, in varying tones, speeds, and dynamics.

Performers should freely walk around the performing space. The piece should begin slowly and sparsely, and end in a way that feels 'natural' to the evolution of the piece.

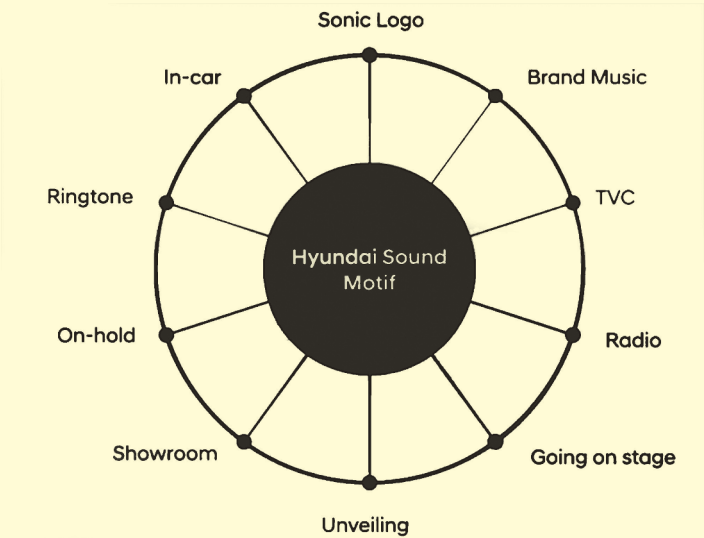
Hyundai Chorus is a minibus in which singers are invited to interpret the variety of the corporate sound design created for the brand. The way is long and mountainous, and so should be this song.

The Hyundai Sound ➡

Leitmotif



▶ ▶ 🔊 0:48 / 1:59 🔍



[https://www.youtube.com/watch?v=\\_F8uft6KA8](https://www.youtube.com/watch?v=_F8uft6KA8)



Hyundai Chorus, tourist minibus, 1988

## Counting Piece

(For up to 10 performers)

Approx. 100 bpm; to be performed clinically and sharply

Performer 1: counts from 1 until 1

Performer 2: counts from 1 until 2

Performer 3: counts from 1 until 3

Performer 4: counts from 1 until 4

(And so on)

Performers each count for 100 cycles (e.g.

Performer 3 will count 33 counts of '1, 2, 3' and end on '1'). Performers should start and end at the same time. Consider repeating the performance if a mistake occurs.

Performers should line up in a straight line. The count-in should be done by each performer counting out their respect numbers.





Kingdom : Animalia



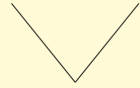
Class : Gastropoda



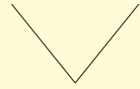
Superfamily : Muricoidea

...

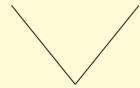
**Kingdom:**  **Animalia**



**Phylum:**  **Mollusca**



**Class:**  **Gastropoda**



**Superfamily:**  **Muricoidea**




**Family:**  **Muricidae**



**Subfamily:**  **Ocenebrinae**



**Genus:**  **Chorus Gray, 1847**

Chorus Gray's composition develops into a chain of repetitive chords that spiral down, punctuated by the different levels of classification of living organisms (spoken by all the performers), from the kingdom of Animalia to this very specific genus: Chorus Gray, 1847.

## Mobile Piece

Together, performers start calling the mobile phones of someone they know in the audience. If the call is declined or disconnected, call another person. If the call is picked up, say 'thank you for coming' and hang up.



**Chorus Intelligence** is the harmonized version of a voice describing the functioning of the Chorus data analytics software.

[script]

*I am an investigator for the UK police force. I have the responsibility for coordinating the digital data my police force may use in a live investigation, to help detect crime and convict offenders. I love my job, as I help keep people safe.*

*The problem I have is that criminals are using more and more sophisticated methods to avoid being caught. Often we will have someone in custody who may be guilty, but we have a limited time to make a charge. I need to quickly know whether the data has the evidence to prove my case. The sheer volume of data is overwhelming, and varies greatly as it includes call-logs, handset and computer downloads; ANPR data, Wifi logs, open-source data, chats, financial and covert reports.*

*Our force needs the right tools to process all this data. If we just process data manually, we risk a failing to charge and convict criminals. Each dataset looks very different from the others, is very difficult to stitch together and contains a lot of noise.*

*That's where the **Chorus** software comes in. **Chorus** allows us to cleanse the data, remove the noise, piece together the pieces of the puzzle and see the big picture.*

***Chorus** allows us to create reports at the push of a button, which are courtroom-ready. That means they are reliable and easy for a jury to understand. **Chorus** has already been tested in court in some of the highest profile cases in Britain. Without **Chorus**, we'd spend months putting our data together. Which means we just didn't have time to look at all the available data. It's possible we'd miss something that could either prove a case or someone's innocence. That's a big risk to me and to the force.*

***Chorus** allows us to look at all the data in a fraction of the time, up to 40 times faster, and ensures we won't miss anything. **Chorus** even helps us to find the links between cases. If there are organized crime units we think may be working together, **Chorus** can quickly tell us if there are links between them. This is great for developing intelligence and progressing investigations.*

***Chorus** doesn't just reduce risk in my force, but it allows me to easily share data on a case with any other police force in the UK or internationally. In fact, nearly 90% of police forces in the UK already use **Chorus**, with hundreds of analysts and investigators relying on it everyday.*

***Chorus** paid for itself in less than 40 days. But having full confidence in my investigations and helping to keep the streets safe is priceless.*

### Shepard Piece

Standing in a circle facing one another, performers attempt to recreate a Shepard tone (an auditory illusion created by the superposition of rising or falling sine waves).

Each voice should go up slowly for at least an octave, fading in towards the middle of the rising tone, and then fading out towards the end of the tone. Performers should try to create overlaps in their rising tones in a consistent manner.

Dawn Chorus (Fishes) is based on an underwater recording of fishes singing at dawn, near the Australian shore. The melody harmonizes with the three main fish species that can be heard in the recording. The score is repeated three times, and can be sung by three voices entering one after each other: the second one comes in at bar 20 and the third at the beginning of the second cycle. They first sing the melody in unison, then desynchronize and dissolve throughout the third and last cycle of the score.

Dawn Chorus (Fishes)

♩ = 60

Sample starts ... (wait about 15 bars)

Entrance Voice 2

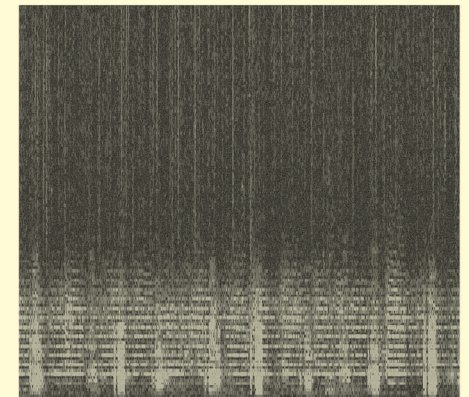
The musical score is written on a single staff in treble clef with a key signature of three sharps (F#, C#, G#) and a 4/4 time signature. The tempo is marked as ♩ = 60. The score consists of 28 measures, numbered 1 through 28. Measures 1-19 show a single melodic line. Measure 20 is marked 'Entrance Voice 2'. Measures 21-28 continue the melody, with some measures showing a third voice entering (e.g., measure 27). The score ends with a double bar line and repeat dots in measure 28.

Robert McCauley and colleagues at Curtin University in Perth, Australia, recorded vocal fish in the coastal waters off Port Hedland in Western Australia over an 18-month period, and identified seven distinct fish choruses, happening at dawn and at dusk.

The low “foghorn” call is made by the Black Jewfish (*Protonibea diacanthus*) while the grunting call that researcher Miles Parsons compares to the “buzzer in the Operation board game” comes from a species of Terapontid. The third chorus is a quieter batfish that makes a “ba-ba-ba” call.

“I’ve been listening to fish squawks, burble and pops for nearly 30 years now, and they still amaze me with their variety,” says McCauley, who led the research.

(Excerpt from *The New Scientist*, October 2016)



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Threshold Piece

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Dawn Chorus (Fishes)

- by Ang/Grossmann

The first iteration was performed at Het Wilde Weten, Rotterdam, on December 9th 2017, with Jan Adriaans, Milou Van Ham, Michiel Huijben, Cora Schmeiser and Kathrin Wolkowicz.

The second iteration was performed at ADM Gallery, Singapore, on February 2nd 2018, with Chan Xing Yun, Chee En Cui, Joanna Cheng, Jonathan Cheng, Bella Dai, Karen Guan, Dionne Lim, Esther Lim, Pan Shuai Nan, Jayakumar Sandhya Pillai, and Daryl Bradley Tan.

Realised with the kind support of Michelle Ho from ADM Gallery, the School of Art, Design and Media, and Leona Quek, lecturer from DG9005 Magic of Voice class, at Nanyang Technological University (NTU).

Credits:

p.8 Logo © Chorus Limited

p.14 & 15 Hyundai leitmotiv and sound design graphics © Why Do Birds, [www.whydobirds.de](http://www.whydobirds.de)

p.16 photo Hyundai Chorus tourist minibus, picture found on [www.wroom.ru](http://www.wroom.ru)

p.17 Chorus Gray classification found on Wikipedia: Chorus (gastropod)

p.20 Logo © Chorus Intelligence, [www.chorusintel.com](http://www.chorusintel.com)

p.20 & 21 Text © Chorus Intelligence, software promotional video (voiceover)

p.23 Excerpts from the article “Fish recorded singing dawn chorus on reefs just like birds” by Greta Keenan, The New Scientist, 01-09-2016

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