

“Potential Music”

Composed by: Anders Vinjar. Lyrics by Beate Grimsrud
Instrumentation: mezzo-soprano, electronics & post-modern audience
Keywords: musical entropy, *uncertainty* as a guarantee for freedom, the creative subject, borders for a piece of art, Shannon, information-theory

“Potential Music” works with classical problems related to human communication and the boundaries surrounding a work of art. The piece balances on a narrow line between order & chaos, where messages on one side is in danger of being appreciated as *obvious and general statements*, and on the other hand being *incomprehensible* out of lack of common references.

This piece of art gets its form as it wanders along the communication-chain:

Composer → Interpreter → Audience

— and the *receiver's* (audience) role in defining what constitutes a piece of art gets focused on.

Whether it's at all possible? — about musical entropy

Art possesses a special function in society, one of its valuable aims is to ask questions *not necessarily possible to answer*, and maybe *not even possible to understand*. We need the Arts *uncertainty* among other reasons out of a comprehension that each and all of us basically *stand alone*. Communication is in the end *only a possibility* — no human can claim to have an understanding of a truth with guaranteed validity for any other. Paradoxically this uncertainty guarantees a *basic freedom* and an accompanying *responsibility* for each individual.

This piece of music optimistically asks a broad range of *potential* questions, and the piece guarantees any one full freedom to choose their own answers.

One necessary precondition for communication is that information finds a place inside certain *categories*, and the Arts are an important factor in the development and adjustment of the categories we use to comprehend reality slightly better as we go.

A musical expression exists along an *entropy scale*, where the placement is dependent on the degree of cognitive structure and predictability it possesses. To the extent that the musical categories brought to use are predictable and general they may mediate *one certain* musical message. *Negative entropy* is put to use where the audience as part of the *listening process* constructs connections, perspective, expectations and comprehension in unpredictable material.

Are we talking about the same thing? The piece in time and space

The composing of this piece started by programming a system for **algorithmic composition** based on certain musical archetypes. This system was put into use to generate a musical raw-material, and to construct the system for interactive processing of audio and video. It was designed to guarantee a rich and free outset, not restricted by limitations in the composers fantasy.

The choice of general categories in such a system may too easily direct the audience towards specific places in *time and space* (existing repertory and style). To get by these restriction very *basic* musical categories were used — mostly gotten from research in ethnomusicology, where they are used to treat general aspects of human musicianship.¹

The **Composer** takes this material and brings it further. *Choices, adjustments, copies, permutations* — and gives the piece its form. The form of this piece resembles what's common in cinema or visual Arts. A *non-linear or cinematographic* story-telling lies as the basis for the development and exposure of the elements of the piece. This process results in 2 objects: the mezzo-sopranos score, and the programs for treatment of audio and video during performance.

While **performing** the piece the singer and the electronics together form the piece even further. The processing during the performance is directed by *stochastic methods* — random process with varying degrees of probability controlled by lookup in the general archetypes lying as the basis of the piece.

The *material* for the electronics is live-recording of the singer. The signal-processing-routines are controlled stochastically and result in sound and video with varying degrees of resemblance to the original — as a direct representation of the human singer on one end, to a free *sound-object* or graphic object at the other end. The resulting audio- and video-stream is lead back into the system, and results in further layers of uncertainty between the piece of music and the audience.

The performer's **physical presence** is integrated into the piece — and becomes part of it — when recordings of her gets manipulated by the system and projected back on the stage she appears on. Also the limit between the acoustic and the visual domain is questioned, by having the manipulation and projection of the video-signal controlled by analysis of the sound. The mezzo-soprano, the electronic processing of sound and video-projection delivers something with *potential to become Art* once it reaches the audience.

Finally the stream of musical information reaches the *audience*. As part of the audience's listening-process, a degree of *negative entropy* will take place in the construction of connections, perspective and understanding in a material with a prevalent amount of uncertainty. In the end what makes up the piece it the audiences ability to *conceptualize* order in the world. The piece has no definition before it reaches the audiences brain, after each listener has used its own cognitive abilities on the information streaming towards them in the concert hall.

¹Bearing names like “Thumbling strains”, “Two-Note Melodies”, “Attacks” etc.

Algorithmic Composition

The Composer

The Performance

Basic Solitude

Negative Entropy

The audience

“Potential Music” — comments to the score

Time and rhythm

Time, rhythm and duration is partly *proportionally* and partly *traditionally rhythmically* notated.

- **proportional notation** is marked by **O** as measure-sign. The duration of one staff notated in proportional manner is **12 seconds**. The musical elements time and duration is given by *horizontal placing* and *duration brackets*
- **rhythmical notation** is marked by traditional notation of meter, tempo, rhythm and duration.

Pitch

Pitch is notated in 3 manners:

1. 5-line staffs for traditional notation of sung pitch and intervals, as well as “*sprechgesang*”
2. 3-line staffs indicates *relative* placement and movement in singers *register*, as well as “*sprechton*”
3. 1-line staff for unvoiced sounds without any specific placement in pitch or register, as well as normal speech

Nomenclature

	Ultrashort, “explosive” <i>voiced</i> syllables on marked place in register – size indicates dynamics
	likewise, but with emphasized <i>breathy</i> voice
	likewise, but with <i>unvoiced</i> syllables
	dotted stem indicates <i>whisper</i>
	Significant <i>airy</i> voice on indicated pitch

	unvoiced sound (indicated in lyrics)
s p f k t	

	sung on <i>in-</i> and <i>outbreath</i>
in out	

	<i>Tremolo</i> on indicated sound. Number of slashes indicates relative tremolo-speed
(rr) oorr (rr)	

	mouth-position — from <i>closed</i> to <i>wide open</i> , triangle indicates <i>nasal</i> character
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	The cross across stem indicates varying categories of voice→song: <ul style="list-style-type: none"> – “<i>sprechgesang</i>” is notated on 5-line staff – “<i>sprechton</i>” (closer to speech, with indication of intonation) is notated on 3-line staff – plain <i>speech</i> is notated on 1-line staff
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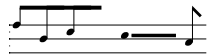
	Lowest and highest possible pitch within available register
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	<i>Bartok-bounce</i> — even <i>accelerando</i> or <i>rallantando</i> , number of beams indicate start- and ending-speed
o - i - i - o - o - o	

	make random choice from pitches in framed box for indicated duration. Repeat first choice if frame occurs between repeat-signs
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...
k/
l/
/s/
f/
h/
/ps/
...

random choice of syllable or sounds from content in frame



proportional notation: duration of *beams* (above staff or at level of note-head) indicates duration of note. A short, slanted beam from stem indicates *very short* duration



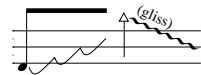
broken duration-beam: continue pattern for indicated duration

a · i · a · i ·



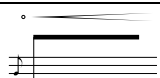
an *arrow* between values (lyrics, dynamics, singing-modes) indicates a *smooth & continuous transformation*

er — (r) — ss



the thin line indicates *continuous pitch-variation* (portamento). Wavy-lines indicates portamento with *vibrato*

ho-jo-jo —



The circle in dynamics indicates *niente*. The line indicates portamento. All portamenti notated with straight line are performed with *even speed* (logarithmic)

ee — ooh



deg_ you vous tu

Lyrics in the piece are set in 3 different languages — Norwegian, English and French — and decides the pronunciation of words and sounds in the voice. The 3 languages are set apart in the lyrics by different fonts:

- **Norwegian** is notated with “Times-Roman”
- **English** is notated with “Helvetica”
- **French** is notated with “Times-Italic”

NB
noter

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Potential Music

Duration pr. staff of proportional music = ca. 11 sec.

A

Voiceless clicks, implosives & ejectives
(size indicates dynamics)

Breathy (voiced) clicks, implosives & ejectives

mixed (voiced, unvoiced & breathy) **sfz**

terse, intense style

mezzosoprano



- /k/
- /t/
- /s/
- /f/
- /h/
- /ps/

ee —————> ooh tonh!

p ————— *sfz* *sfz* >

aa—ooh oorr ————— (rr) ho

- /ka/
- /t/
- /ph/
- /so/
- /fa/
- /dn/

more air than tone

pp *pppp*

ss oo mm mm hh —————> aa

pp *sfz* *sfz* *sfz* *ppp* *ppp*

a i → s → o → a ss h → a ————— kh aa —————> hmm s p f k t

random choice from indicated pitches;
rhythm ad lib.

pppp *sfz* *pp* *ppp*

mm _____ h,h. . a _____ kh! o-i-o-i-o-i-o-i s-a-s-a-s o o o mm _____

randomly pick 4-note figure to
repeat for indicated duration

sfz *mp* *mf* *p* *f*

mm _____ o - i - o - i - o - i - o

a
m
o
i

/a/
/o/
/i/
/e/

sfz *mp* *sfz* *pp*

fa *fa* *fa* oo _____ sah i _____ o _____ ff sa ss sa s,k,t,poh

o
o
i
i
a

ppp *mf* *ppp* *pp*

oo _____ o - i - a mm _____ aah

mf *pp* *sfz* *pp*

ka te oo man som du oo

pp *p* *sfz* *pp* *mf* *sfz* *mf* *ppp*

aa te oo ha fa - fa - fa - fa - fa - fa - fa Flam - men - de mm h,k,t,k

p *mf* *pp* *p* *ppp* *mp* *mf*

a - a - i - a - i - a - i - i oo oo ii h,s,s,sa ho ho-jo-jo je-je-je

B *f* *mf* *f* *pp* *whisper* *sfz*

(- je - je -) Jeg vil ha oo alt Det var alt (t) sier hun lavt t!

mf *sfz* *p* *pp* *f* *p*

Kel - ner! (r) ss he - se stem - men kvin - ne med hatt oo

mf *p* *f* *mf* *p* *f* *sfz* *f*

luft - tens barn al - le oss in the wa - ll oo alt h s t ff s k p t h h

mf *waltz-feeling* *p* *ff* *mf* *mf*

La meg få før - ste sne - ens hvi - te kjo - le Kel - ner a - i - a - i Rop - er fra et sted jeg ik - ke ser

fff *crying voice!* *f* *mf* *sfz* *f*

aaa Jeg vil ha smør - blom - stens gu - le skyg - ger sjø - grøn em - al - je Som s,k,t,k lyd

mf *sfz* *p*

dyp blå den he-se stem-men hat-ten o-i-o-i-o Som be-ru-se-de barns lek i sol-fylt luft

f *f* *pp* *p*

Det var alt alt aa aa Det var alt Si-er hun lavt s,s,s,s

pp *mf* *sfz* *ff* *f* *mf* *sfz* *mf* *mf*

s,s,s ss oo alt skri-ker mot veg-gen mot al-le oss i veggen

mf *f* *p* *mf* *mp*

Alt lev-en-de er dø-en-de ple-i-er(r) jeg

mf *pp* *f* *pp* *sfz*

å,å,å,å,å,å si s s s til (l) deg Alt lev - en - de er døen - de

mf *sfz* *f* *mf* *f* *p*

plei - er jeg å si o - i - o - i - o alt

/æ/
/œ/
/e/
/e/

mf *pp* *p*

plei - (i) - er jeg å si til deg

/e/
/i/

mf *f* *p* *mf*

gradual transform from sung words towards "nonsense" syllables

Mål,og,men,ing med liv - et Det fins grenser

f *mf* *f* *sfz* *ppp* *mf*

Jeg _____ alt lev-en-de er dø-en-de de-de-de deg plei - (i) - er _____

løf ter løf tes tør ker

f *mf*

Det _____ fins _____ (s) _____

krå ke py ja mas

Hun _____ er _____

$\text{♩} = 70$ (5/4)

p *sfz* *p* *mf* *mf* *mf*

og - så vak - ker, men på hen - ne syns my-e bed-re re aa -> oo -> mm

D *f* *squeaky sound* *mf* *mf* *mf tense*

haa _____ ho _____ la,ba,la,da _____ oo -> ee labaladala

mf *pp* squeaky sound *sfz*

oo - h,b,daa oo - h,b,da oi _____ fra et sted jeg ik - ke _____ ser _____ foo

f *pp* *mf* *pp* *pp*

oo → ee oo _____ mm _____ oo _____ ton s,k,poi ho s,k,ta hoi fra lyd

ppp *p* *ppp* *mf* *mf*

oss i veg - gen _____ hoo _____ mm _____ lyd - en i rom - met Som

E *mf* *p* *mf* *f* *pp*

Det fins menn - esk - er Som _____ (m) lyd o - i - o - i - o - i - o

mf *pp* *sfz* *mf* *ff* *pp* *p*

s k t t t t t s k t s k t t k,r,å k,e ta hs mm En krå-ke i tri-kot fa - rer s-o-s-o-s-o-s

mf *f* *sfz* *pp* *mf* *p*

løf - tes mot, p a r a d i ss Vak - kert Flammele sak - te som smak - en av all verd - ens språk

f *p* *sfz* *ff* *mf* *p* *f* *mf*

oo aa sa vi det at ser på deg at speil og stemmer hvi-ken helst er en som

f *mf* *p* *mf* *f* *sfz* *ff* *f* *pp* *p*

kvin - ne at hatt (t) sa vi det o - i - o - i - o - i hatt kvin-ne med hatt aa kjen-ner du ver - den

mf ah ah ah ah s,s,s slik den ser på deg *mf* s - k - d - det *f* e - er - er *p* virk - lig het

F *mf* aa aa *ff* aa *p* t *sfz* ee t *mf* ek - ko - et er *sfz* *p* det at *ppp* speil og stemmer *mf*

p a(t) t sa vi det at *f* sang - en ik - ke er *p* tan - ken *f* speil og stem - mer *mf* at (t) er (r) *p* en hvil - ken som helst kvin - ne *f* *pp* *ppp*

pp og den *mf* swa - hi - lis - ke månen *pp* *p* {det,er,de,som,syng,er}

gradual transform from spoken words towards sung "nonsense" syllables

ff *mf* *p* *ppp* *mf*

Du _____ ser på det u-kjente at ek - ko - et _____ er det eg - ne språk

mf *p* *p* *f* *pp*

ser _____ på _____ deg _____ vet _____ /a,u,e,å,e,u/ og _____ vet _____ /e/ /kh/ /o/ /kh/

p *mf* *pp* *mf* *p* *sfz* *p* *ff* *sfz*

er _____ det _____ eg - ne _____ /s/
/p/
/t/
/k/ sang-en ik-ke er tan - ken men _____ ly - den _____ i _____

mf *ppp* *mf* *ppp* *f* *p*

at _____ t,t,t kjen ner du ver den slik den ser på _____ d, r, det er virk - lig - het

G $\text{♩} = 60$ *mf* *pp* *pp* *mf*

te oh Kel - ner (r)

pp *pp* *mf* *p*

sst - ts_ tst! sst_ ts Hun er vak - ker oooh oh Så fint, nå bren - ner vi

ff *p* *p* *f* *tongue click* *lip smack*

Som lyd! Som lyd - en av brenn - en - de sig - a - ret - ter oht (t!) ohp (p!)

H $\text{♩} = 45$ *mf* *p* *pp* *p* *mf*

Det fins (s) men - nes - ker Man - ge men - nes - ker Det fins

gentle
pp *p* *mf* *pp* *p* *pp* *mf* *mf* *f*

mål mål og men - ing med li - vet Det fins gren - ser

f *mf* *f* *pp* *ppp* *sfz* *f*

for - hva - a j.j.j. e - eg (g) i - k ke for -

f *p* *f* *mf* *f* *p* *f*

- står oo - aa det fins mennes - ker det fins mennes - ker Det fins gren - ser

J *f* *sfz*

aah! eeh! aah! eeh aah!

mf *ff* *f*

Kan - skje no - en rop - er aah! _____ mmm _____ aah aah! _____ aah! _____ (0)

f *fine*

oh so eeh mmm oh _____ fine

