HIP
(Historically Informed Practice)
in Music and Ecology

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Introduction

What is HIP in Music?

HIP and Baroque Music (1600-1759)
HIP in Practice with Baroque Music
  - Vivaldi
  - Bach
  - Handel

HIP and Classical Music (1759-1828)
HIP in Practice with Classical Music
  - Mozart
  - Haydn
  - Beethoven

HIP and Romantic Music

HIP and Ecology

HIP in Practice in Ecology
  - Jotunheimen
  - Scottish Highlands
  - Jostedalsbreen

Conclusions about HIP
Introduction

Two cultures – **music** (humanities) and **ecology** (natural sciences)

Example of how one of my main hobbies and interests (music) has influenced how we have done some interesting scientific studies in plant ecology

Also an example of how personal friendships developed to create an ‘**invisible network**’ linking music and ecology

A bit about myself first
Studied Natural Sciences at University of Cambridge 1963-1966 (Botany, Zoology, Biochemistry, Geology, Mathematics for Biologists; specialised in my last year in Botany)

1966-1969 PhD Past and present vegetation of the Isle of Skye – a palaeoecological study
(Combination of modern ecology of present-day vegetation and of palaeoecology to reconstruct past flora, vegetation, and environment 14000-9000 years ago, so-called ‘late-glacial’)

Palaeoecology – fossil pollen, spores, and other plant remains preserved in lake sediments
1970: Post-doctoral Fellow, University of Minnesota, USA

1971-1985: Staff member, Botany School, and member of Sub-Department of Quaternary Research, University of Cambridge. The late Nicholas Shackleton (1937-2006) also a member. Nick famous for his work on palaeoceanography and discovering the causes of ice ages. Also keen musician and collector of old instruments. Had largest collection of clarinets – over 800.

1985-today: Botanical Institute and now Department of Biology, University of Bergen, also Emeritus Professor at University College London and Visiting Professor at University of Oxford. Mainly involved with palaeoecology, quantitative techniques, and some ecology.
Through Nick Shackleton, met in 1972 his next-door neighbour, the professional musician Christopher Hogwood. From this developed strong and long-lasting friendship and interest in Hogwood’s pioneering attempts at historically informed performance in baroque and early classical music.
Sir Nicholas Shackleton and his last publication
350 years of The Royal Society in 2010 – postage stamp special issue
Nick lectured on both ice ages and climate change in the Department of Earth Sciences and on acoustics and woodwind instruments in the Department of Music, Cambridge.

**Two cultures** – Weber’s piano and computer output of oxygen isotope record for last half million years in famous V28-239 core

Nick McGegan, now a famous HIP musician, was a student in Cambridge in early 1970s.

“The course on acoustics tried to forge music and mathematics, and I couldn’t care lass. But it was taught by a man called Nicholas Shackleton, who also happened to have a large collection of ancient wind instruments and became a famous palaeoclimatologist. That’s what got me started on old musical sounds.”

NS gave NMG a 1790 George Astor boxwood flute
Adlam Burnett fortepiano after Heilmann c. 1780

George Astor flute c. 1790

Johann Christian Bach
Four Sonatas & Two Duets, Op. 18

Nicholas McGegan • Colin Tilney
Christopher Hogwood
Christopher Hogwood

Born 1941, studied Classics and Music and Cambridge University. Undergraduate at Pembroke College 1960-63. In same year at College was David Munrow, the first person to try to perform ‘early music’ in a historically informed way.

Hilary Birks (undergraduate at Newnham College 1962-65) played the clarinet in student orchestras in Cambridge and sang in a choir conducted by Christopher Hogwood. Invisible network being formed.
1967 David Munrow and Christopher Hogwood founded the Early Music Consort of London

1976 David Munrow sadly killed himself
1973 Christopher Hogwood founded and directed the **Academy of Ancient Music** (AAM)

In reality a recreation. Originally a musical society formed in London in 1726 as the Academy of Vocal Music. It aimed to revive and restore early (more than 20 years old!) music and gave seasons of concerts of Ancient Music at two-weekly intervals.

Became the Academy of Ancient Music in 1731.

Dr Johann Christoph Pepusch (1667-1752) was its director until his death. Handel played at its meetings. Its last concert was 3 February 1791 led by John Peter Salomon.
Recreated in 1973 to perform baroque and classical music on period instruments using historically informed performance practices
First AAM concerts in Fitzwilliam Museum, Cambridge

1974

1975

1976

1977

All linked to exhibitions of art, musical scores, musical instruments, etc
AAM started with English baroque or early classical music

1973

1976

1977

1977

1981
What is HIP – Historically Informed Performance – in Music?

Performance practice – adapted from German Auffuhrungspraxis

In context of Western music, involves all aspects of the way the music is performed

HIP – nice phrase, invented by Andrew Porter in the New Yorker. Half-way house between the old emphasis that the ‘authentic’ musician had to play everything on exactly the correct original instruments and had to try and resurrect a 300-year old soprano tone in order to let that do the job for you. Instead you can be historically informed and play on not absolutely appropriate instruments, and the performance can still have a good deal of style.
Includes

• notation and unwritten notes – relationship between the written notes and the sounds they symbolise, especially in matters of rhythm, tempo, and phrasing and articulation
• improvisation and ornaments
• instruments and their history and physical structure and the ways in which they are played
• voice production or sonority (e.g. vibrato)
• matters of tuning, pitch, and temperament
• ensemble or orchestra and their size (forces), layout, and the modes in which they are directed
• dynamics

Usually approached through study of treatises, instruction books, critical writings, and iconographs, as well as actual instruments and music itself
When the early music revival started in the 1960s with people like Nikolaus Harnoncourt (Austrian), Gustav Leonhardt, Frans Brüggen, Anner Bylsma, and Jaap Schröder (all Dutch), record companies and concert promoters talked about

‘authentic performances’
‘original instruments’
‘as-Bach-would-have-heard-it’
‘like removing layers of dirt from a 17th century painting to reveal its original beauty and colours’
‘what’s olde is new! Always performing on historically accurate instruments so you hear the music as the composers did’

Important to emphasise that ‘early’ musicians can never be in the past or be authentic. The significance of their music-making depends on the fact that performing is in the present-tense, although music of the repertoire carries its past with it, like DNA, to be discovered, explored, studied, and acknowledged.
Andrew Porter devised the phrase HIP as a more useful terminology that opened up this general approach to all musicians with a sympathetic mind-set, not simply the academic musicologists or musical ‘antiquarians’.

Amazingly controversial idea in music in 1970-80s, now widely accepted as a valuable way of approaching performance practice. Not the only way.

Silly questions used to be asked like why do the musicians not dress up in original costumes or early musicians must prefer 17th century plumbing and sanitation!

But HIP is not a charade; it is always a modern process that calls for curiosity, constant questioning, and research.
A cautionary tale from Jorge Luis Borges. A minor 19th century French writer Pierre Menard became so obsessed with the story of *Don Quixote* that he tried to turn himself into Cervantes by learning Spanish, became Catholic, fought the Turks, and forgot three centuries of history, and eventually managed to write again (rather than transcribe) parts of this epic. However, a passage written in the 19th century carries a very different message from the identical words written in 1602.

HIP can never be the past – it helps us in the present to **understand** the past

Musical archaeology – brings a scientific approach into music and music-making. Fascinating and challenging
HIP important in the performance of

- Medieval (1200-1430) and Renaissance (1430-1600) music
- Baroque (1600-1759 – death of Handel) music
- Classical (Haydn’s first symphony – 1759-1828 – death of Schubert) music
- Romantic (composition of Berlioz’s Op.1 1828-~1914) music

Concentrate on HIP for Baroque and early Classical music. Say a little about Romantic music.
HIP and Baroque Music (1600-1759)

Seven key questions

1. Orchestra
2. Continuo
3. Pitch
4. Notational conventions
5. Voices
6. Ornamentation
7. Instrumentation
1. Orchestra

Size of ensemble – very difficult to discover

Historical notes, occasionally records of payment to musicians

Much intelligent guesswork and more recently, meticulous academic research by Richard Maunder, retired Cambridge mathematician and close friend of Christopher Hogwood, who completed scores of Mozart’s Requiem, Mass in C Minor, and Coronation Mass in C Major for AAM recordings.
2. Continuo

‘basso continuo’ – continuous bass part that runs through a concerted work of Baroque and early Classical music (also jazz) and serves as a basis for harmonies

Keyboard instrument, usually one harpsichord (cembalo), sometimes also a small chamber organ or a second harpsichord in larger pieces

Also cello and double bass, possibly also bassoon

Plucked instruments like theorbo, chitarrone, or baroque guitar, particularly in Italy

Rarely ever documented. Great scope for improvisation
Basso continuo instruments

Chamber Organs

Harpsichords

Cello

Baroque guitars

Chitarrone

Theorbos & lutes
Functional as a whole, often situated near the centre of the band
3. Pitch

Quality of a sound that fixes its position in the scale

Modern pitch $A = 440$ cycles per second (Hz)

Handel’s tuning fork gives $A = 422.5$ Hz

Baroque pitch generally about 415 cycles per second but different pitches used for English, German, French, and Italian music ($A = 380-480$ Hz)

Early Classical pitch about 430 Hz

Historical woodwind instruments (e.g. oboe) useful indicator of past pitch

‘The Enraged Musician’ 1741
Bruce Haynes 1942-2011

Born in USA, moved to the Netherlands to pioneer playing of baroque oboe. Then became an academic musician in Montreal. PhD was on pitch. Examiner was Nick Shackleton.
Haynes examined surviving original brass and woodwind instruments, particularly the oboe, to determine the pitch. Pitch indicated by their lengths and distance between finger holes. Surviving old organs can tell us about pitch by the length of their pipes in relation to the key that sounds them.

Showed different pitches in different countries in Baroque

- N Italy: 430 Hz
- France: 385 Hz
- Germany: 403-430 Hz
- England: 448 Hz
- Holland: 387-440 Hz

Single-piece flute found in Novaya Zemlya left behind by 1697 Dutch expedition is tuned to A = 440 Hz (modern pitch!)
4. Notational conventions

Players have to observe certain unnotated conventions which made writing music easier but leads to a lack of precision.

Handel’s Organ Concertos – classical case with missing movements!
Increasing evidence from examining original scores that not all notes were written down by the composer and that editors have inserted notes to ease the task of the modern player. ‘Contaminated scores’

Renewed interest in correct notation

Major work being done on Quantz 300+ flute sonatas by Rachel Brown, English keyboard music (Purcell, Bull, Croft, etc) by Christopher Hogwood. Musical scores are challenging and changing!

Later composers, e.g. Mendelssohn suffered from ‘krankheit’ – a mania for revising and adapting and crossing out. What is the original score?
5. Voices

Size of choir

High voices generally favoured (soprano and castratos and counter-tenors)

Choirs usually small

Choruses often performed only by soloists
6. Ornamentation

Performers both vocal and instrumental expected to embellish the written notes

Standard vocal form, *de capo aria*, designed to enable singers to show off their skills
7. Instrumentation

String instruments – gut strings, shorter bows

Violin        Viola        Cello
Violone 16′ bass ≈ double bass
Also Viola de gamba, fretted 6-string instrument
Viola d’amore
Wind instruments – all with 1-3 keys only, made from boxwood or ebony

- Flute
- Oboe
- Bassoon
- Recorder (blockflöte)
- (Clarinet – chalumeau) (Piccolo)
Brass instruments – no valves, beastly to play

Horn
Trumpet
(Trombone, Cornet, Sackbut)
Timpani
Drum - small, covered with tanned animal skin, small drumsticks. Kettle drums

Plucked instruments
Lute
Theorbo
Guitar
Chittarone
Mandolin

Keyboard instruments
Harpsichord
Chamber Organ
Organ
(Spinet, Clavichord)
Contemporary illustrations

A Concert in Cambridge
1767

A Sunday Concert
1782
HIP in Practice with Baroque Music

Vivaldi  L’Estro Armonico Op. 3
Bach    Brandenburg Concertos
Bach    Mass in B Minor
Handel  Messiah: a Sacred Oratorio
         (Foundling Hospital Version 1754)
Handel  The Musick for the Royal Fireworks and Water Music
Vivaldi - L’Estro Armonico Op. 3 (1711)

Antonio Vivaldi (1678-1741)

Trained for priesthood and ordained but soon ceased to say Mass (for health reasons?)

Appointed in 1703 maestro di violino at Ospedale della Pietà, a Venetian girls’ orphanage. There until 1716. Appointed maestro de concerti in 1716 & maestro di cappella 1735-38

Very prolific: 550+ concertos, 350 for solo (230+ violin); 40 double concertos, 30+ for 3+ instruments, 60 without solo. Amazing range of solo instruments – lute, mandolin, horn, chalumeau, bassoon, etc.
Famous for ‘Four Seasons’ – representation of seasonal activities

Began to become well known with his first publications of trio sonatas (1703-5), violin sonatas (1709) and his 12 concertos *L’Estro Armonico* (1711)

Contains some of his finest concertos, Bach transcribed 6 of them for keyboard. Musicians came to visit Vivaldi in Venice to see him play

*L’Estro Armonico* defies translation – neither *The Harmonic Fancy* nor *The Musical Flush* gives the right combination of genius and fantasy of these pieces
Four groups of concertos
  each with a solo group for 4 violins, 2 violins, and a single violin

Pairwise arrangement by keys
  each concerto in a major key is followed by one in a minor key, except for numbers 11 (D minor) and 12 (E major)

Designed to show maximum variety if played as a whole

How to perform them?
Vivaldi was violin teacher at Conservatorio dell’Ospedale della Pietà. Orphanage provided musical training for young girls.

They are brought up at the expense of the state and they are trained only to excel in music. They sing like angels, and play the violin, flute, organ, oboe, cello, bassoon; in short there is no instrument so large that it could frighten them… I swear to you there is nothing more pleasing than to see a pretty young nun in a white habit, with a spray of pomegranate blossom behind her ear, conducting the orchestra and beating time with all the graces and precision imaginable.  

Charles de Broses 1720
The 12 concertos were issued in eight part-books (4 violins, 2 violas, 1 violincello, 1 ‘violone e cembalo’).

The music is too complex and too demanding to be performed with anything other than 4 solo violins, 1 cello part which occasionally diverges from the continuo, and 2 violas which occasionally divide.

Vivaldi clearly intended that each part would be played by a single player (as, we shall see, in Bach’s Brandenburg Concertos).
AAM’s HIP was to use solo strings throughout and a layout like this

Theorbo

Violin 3

Viola 1

Cello

Double bass

Harpsichord

Violin 1

Violin 2

Viola 2

Organ
Continuo improvised element – two fragments of a realisation written out by Vivaldi show that he (and other Italians) regarded the continuo as a background support to the harmony, rather than a foreground rival to the soloist.

AAM used organ and plucked theorbo for concerto 4, organ alone for 1, 8, and 9, and harpsichord for concertos 2, 3, 5-7, and 10-12. Varied continuo works well
Bach Brandenburg Concertos (1721)

Perhaps some of the most remarkable and unique concertos ever composed – out-do Vivaldi

Johann Sebastian Bach (1685-1750) was one of the greatest composers ever, particularly of choral and organ music, also harpsichord and other solo instrumental music, orchestral suites, and various concertos for violin, keyboard, etc.
The 6 Brandenburg concertos were neither written for the Margrave of Brandenburg nor ever played by his orchestra.

The final copy of the concertos were selected and revised by Bach from material already in use by the orchestra of Prince Leopold at Cöthen. This copy was presented to the Margrave in 1721 with an elegant (almost too ingratiating) dedication in French (? not by Bach himself), but remained untouched and unplayed on the Margrave’s library shelves in his collection of 177 concertos ‘von diversen Meistern’ that passed to the Berlin library after the Margrave’s death.
YOUR ROYAL HIGHNESS

As I had a couple of years ago the pleasure of appearing before Your Royal Highness, by virtue of Your Highness’ commands, and as I notice then that Your Highness took some pleasure in the insignificant talents which Heaven has given me for Music, and as in taking leave of Your Royal Highness, Your Highness deigned to honour me with the command to send Your Highness some pieces of my composition: I have then in accordance with Your Highness’s most gracious orders taken the liberty of rendering my most humble duty to Your Royal Highness with the present Concertos, which I have adapted to several instruments; begging Your Highness most humbly not to judge their imperfection with the rigour of the fine and delicate taste which the whole world knows Your Highness has for musical pieces; but rather to infer from them in which I try to show Your Highness therewith. For the rest, Sire, I beg Your gracious favour toward me, and to be assured that nothing is so close to my heart as the wish that I may be employed on occasions more worthy of Your Royal Highness and of Your Highness’ service—I, who without an equal in zeal am, Sire, Your Royal Highness’ most humble and obedient servant.

Cöthen, 24 March 1721

Jean Sebastian Bach
Instrumentation of Brandenburg concertos

1. Violin, 2 oboes, bassoon, 2 horns + ensemble
2. Violin, recorder, oboe, trumpet + ensemble
3. 3 violins, 3 violas, 3 cellos, violone, harpsichord
4. Violin, 2 recorders + ensemble
5. Violin, flute, harpsichord + ensemble
6. 2 violas, cello, 2 viola da gambas, violone, harpsichord

Strange combination of recorder (soft) and trumpet (loud), or 2 oboes and 2 horns. Only works with period instruments and small chamber forces. Before HIP, replaced formidable high trumpet part in 2 with soprano saxophone and E-flat clarinet!
AAM recording Brandenburg Concerto 2
Various problems arise

1. What type of violone (= double bass) was intended?
   - Trial and error used by AAM
   - Violone Grosso 16’ used in concertos 1 and 3
   - Violone Grosso to low D in concerto 5
   - Violone tuned to G sounding at 8’ pitch in the rest
2. Concerto 5 harpsichord, flute, and violin

First keyboard concerto. Harpsichord starts playing \textit{basso continuo} (easy), then playing \textit{solos melodies} in dialogue with flute and violin (moderately difficult), then gets carried away into \textit{virtuoso scales} (very difficult), and finally leaves everyone behind as the harpsichord reaches out into the universe in a huge \textit{solo cadenza} (mountain-top experience). Requires a large harpsichord with 2 keyboards. Bach acquired such an instrument in Cöthen in 1719 and in 1721 rewrote his earlier versions of this concerto to take absolutely full potential of this new ‘modern’ instrument.

(Bach being played on grand-piano today by Glenn Gould or Angela Hewitt raises questions as to what Bach would think!)

Shows how HIP needs knowledge of the instruments of the time as well as historical records, and manuscript sources and notes.
Bach Mass in B Minor (1748-1750)

Bach famous for his choral works – St John Passion, St Matthew Passion, Magnificat, Christmas Oratario, over 220 church cantatas, and Mass in B Minor.

What was Bach’s choir? Certainly male soloists with specific parts, but who else?

Topic of much dispute in the HIP world.

Started by Joshua Rifkin with his recording of Mass in B Minor in 1980 with no choir, only soloists in the choir (but female sopranos!).
All the available (but sketchy) evidence suggests that Bach used a single singer – *concertista* – for each part of soprano, tenor, bass.

The *concertisti* sang not only the *solo arias* and *recitatives* but came together to form the ‘*choir*’ when needed.

The quartet of *concertisti* could, in some cases, be reinforced by another quartet, the ‘*ripieno singers*’ who doubled the *concertisti only* in the ensemble sections.

Joshua Rifkin & Bach Ensemble
Andrew Parrott notes that the number 12 figures strongly in all Bach part-books and church records. Suggests that Bach’s idea of a 12-strong first choir would be

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Chorales &amp; Chants</td>
<td>- 12</td>
</tr>
<tr>
<td>Motets</td>
<td>- 8 singers + 4 additional voices</td>
</tr>
<tr>
<td>Cantatas</td>
<td>- 3-4 concertisti + 8-9 others, serving as string players or ripienist singers</td>
</tr>
<tr>
<td>Passions</td>
<td>- 2 choirs of 10 + 4 soloists</td>
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Does a Mass in B Minor work with 6 *concertisti* soloists and 6 ripienists work?

**Yes**, very much so!

but needs a small ensemble of

- 4 violins
- 1 violone
- 2 bassoons
- 1 timpani
- 1 viola
- 2 flutes
- 1 horn
- 1 chamber organ
- 1 cello
- 3 oboes
- 3 trumpets
Opponents to the Rifkin-Parrott ideas, like Ton Koopman

“Let us hope it is not true, but if it is, let us hope it will not be generally known”

A contemporary response to Darwin’s theory of evolution
Handel Messiah – A Sacred Oratorio (1754)

Perhaps the greatest work of George Frideric Handel (1685-1759). English composer of German birth. Came to England in 1717, very successful as opera composer until about 1730-1740. Tried his hand at dramatic staged biblical oratorios but these were banned. Wrote oratorio *Athalia* in 1733 to perform at the Sheldonian Theatre, Oxford with his ‘lowsy crew’ of ‘foreign fiddlers’.
Composed Messiah – A Sacred Oratorio in 1741 using the libretto by Charles Jennens. First performed in Dublin in 1741-2 in aid of charity.

Between 1742 and his death in 1759, Handel gave regular performances for charity of Messiah, usually with about 16 singers and an orchestra of 40 in aid of the Foundling Hospital.

Handel bequeathed his score of the 1745 performance to the Foundling Hospital where it is preserved today. Includes a list of orchestral players and singers for the performance, along with what they were paid. Cost about 78 guineas (~800 kroner). Top soloist was paid 6 guineas (~60 kroner) and organ blower about 50 øre!
Foundling Hospital

and its chapel
Complete opposite to the problems of Bach’s choir!

Choir  
6 boy trebles
13 men (altos, tenors, basses) from Chapel Royal (Andrew Gant today)

Soloists  
2 female sopranos
1 female alto
1 male tenor
1 male bass

Orchestra  
14 violins
3 cellos
4 oboes
2 horns
organ
6 violas
2 double basses
4 bassoons
2 trumpets
harpsichord (Handel)
Westminster Abbey Choir
Academy of Ancient Music
1982

As close to a historical performance as you can get!
Handel composed the Musick for the Royal Fireworks for outdoor performance to celebrate the signing of the Treaty of Aix-la-Chapelle that ended the war of Austrian succession. Like many recent wars, it was a war that England had entered with reluctance and from which she gained almost nothing.
Proclaimed on 2 February 1749 by Duke of Richmond that there would be special celebrations and Handel, as England’s leading composer, would compose some special military or martial ‘musick’ to accompany a fireworks display at Green Park around a grand ‘machine’ 410 feet (125 m) long and 114 feet (35 m) high.
Handel originally composed for ‘a band of musick’ of
40 trumpets 16 oboes
20 French horns 16 bassoons
12 side-drums 8 pairs of kettle-drums
“and a proper number of flutes and fifes, with 100
cannon to go off singly at intervals with the musick”

Could never have played together – 40 trumpets
and 16 oboes would have been impossible!
Next Handel proposed 16 trumpets and 16 horns, then 12 of each, eventually 9. Simply not enough extra military players who could read music; army musicians usually play from memory.

Eventually composed for

9 trumpets          24 oboes
9 French horns      12 bassoons
3 side-drums        4 pairs of kettle-drums
1 contra-bassoon or serpent
27 April 1749

After King George II inspected the ‘machine’ (as the fireworks building was called), music began. An accidental fire brought the proceedings to a hasty conclusion leading to a brawl between the designer of the ‘machine’ and the comptroller of His Majesty’s Fireworks.

Decided too risky to have fireworks and musicians together! Music played and finished before the fireworks started.
Ever resourceful, Handel wanted to use the music again, so a month later he repeated it at his first concert in the newly built chapel of the Foundling Hospital with a ‘normally constituted’ orchestra of one third of the original wind group:

3 trumpets  
6 oboes

3 French horns  
3 bassoons

1 side-drums  
2 pairs of kettle-drums

plus

12 first violins  
10 second violins

4 viola  
2 cello

2 double bass  
1 harpsichord
So what is a HIP of The Musick for the Royal Fireworks?

1. Sir Charles Mackerras 1958 – modern instruments
   26 oboes
   14 bassoons
   4 contra-bassoons
   2 serpents
   9 horns
   9 trumpets
   3 pairs of kettle-drums
   6 side-drums

Began at 23:00 on 13 April, finished at 02:30 on 14 April, the 200th anniversary of Handel’s death
2. Robert King (1989) and Trevor Pinnock (1997) directed the 1740 outdoor version with ‘old’ instruments

9 trumpets       24 oboes
9 French horns  12 bassoons
3 side-drums    9 kettle-drums

3. Christopher Hogwood and AAM (1981) mixed string and wind as used at the Foundling Hospital concert in May 1749
But in researching for the score for the Fireworks Music, Hogwood found in a bottom drawer at the Royal Society of Musicians the earliest manuscript of Handel’s Water Music of 1717.
“At about eight in the evening the King (George I) repaired to his barge ... Next to the King’s barge was that of the musicians, about 50 in number – trumpets, horns, oboes, bassoons, German flutes (= recorders), French flutes, violins and basses, but no singers. The music had been composed specially by the famous Handel, a native of Halle and His Majesty’s principal court composer. His Majesty’s approval of it was so great that he caused it to be played three times in all, twice before and once after supper, even though each performance lasted an hour. The evening was as fine as could be desired for this occasion and the number of barges full of people wanting to listen was beyond counting. ... The concert cost Baron Kilmanseck £150 for the musicians alone!”

Frederick Bonet, Brandenburg Resident in London (1717)
Editions that explain things, sometimes wrongly, can become current norms, as in the case of Handel’s Water Music

Idea developed that the lovely collection of pieces with different orchestrations for performance on the river to mollify the king, somehow came to be corrupted in the edition that came down to us. Idea was that this constantly changing music should in fact be three suites of music. This is how it has been frequently recorded, including AAM (1978).
Musicologists proposed that there was hidden in the music a suite involving trumpets, so it was called Suite No. 1 the Trumpet Suite in D major. Suite No. 2 involved French horns, the Horn Suite in F major. Then, as an apology at the end, came the other movements which tended to have flute and recorder and small-scale things, so this was described as Suite No. 3 for Flute in G major.

A theory then developed that the loud Trumpet suite was played on the river as they went up to Chelsea and Chiswick, the quiet Flute Suite was played whilst they had supper indoors, and the Horn Suite was played loudly as they returned.
But there was a problem with this model, even though it looked neat and tidy. The contemporary accounts clearly say that the trip upriver had a mixed band of instruments (flutes, recorders, oboes, trumpets, horns) on the music barge and they played continuously for one hour going upriver and after supper they played continuously for one hour, returning to London at 04:30.

It must have been a noisy night/morning!
What does the original score tell us?

The old mixed-up score, pre-musicologists, was exactly what had been used in 1717 and it was Handel’s clear intention. Musicology has got it wrong, and we have jumbled pieces into the old sequence.

Horns, then trumpets, then flutes and recorders, and then again trumpets.

Much loved by brass players who like to have time off to relax as well as time on playing to show off!
A wonderfully unique example from the 18th century running for one hour.

No other music, not even ballet scores, from the 18th century that is so continuously through-composed with such varying orchestration.

Nice and brilliant idea of the young Handel.

Sad that scholars thought suites had got mixed up! Handel had no intention of having suites at all. Instead, he composed a kaleidoscope of ravishing and varying music that, when played in the sequence Handel intended, provides an hour of Baroque musical bliss. Shows how important it is to beware of musicology overstepping itself. No substitute for the original scores!
HIP and Classical Music (1759-1828)

Seven key questions

1. Orchestration
2. Continuo
3. Pitch
4. Notational conventions
5. Voices
6. Ornamentation
7. Instrumentation
1. Orchestration
   Masses of documentation, programme notes, etc.

2. Continuo
   Evidence patchy, much left to the musicians of the day

3. Pitch
   About A = 430 Hz

4. Notational conventions
   Less of a problem but still a problem in chamber works

5. Voices
   Numbers better known
6. Ornamentation
   Evidence patchy, least fixed and most difficult

7. Instrumentation
   Some instruments were developing very quickly, especially woodwind and brass instruments acquiring additional keys
   String instruments of baroque type still play early classical music – ‘mixed orchestras’
   Rapid development of fortepiano (early pianos) 1747-1825. Corresponding decline of harpsichord from about 1760. Mozart last mentions a harpsichord in 1784
Some additional aspects

8. Metronomes invented in 19th century. Clockwork-driven pendulum device invented about 1812. Tempo words tried to become more standardised and related to, for example, heart beat. No clear consensus.

9. Interpretation

Score is simply a ‘road map’ for the performance that is then open to interpretation. How much? Mozart’s practice was to reinterpret his music at each successive performance. What about today when one has heard Jupiter Symphony 41 played so many times with massive forces? Problem of trying to interpret something from 1788 without replicating something of 2010. Should we? What is HIP?
HIP in Practice with Classical Music

Mozart Symphonies
Mozart Clarinet Concerto
Mozart Piano Concertos
Haydn Symphonies
Beethoven Piano Concertos

1984
Mozart Symphonies 1764-1788

Extensively researched by Neal Zaslaw for AAM major recording of the complete symphonies 1979-1982
How many Mozart (1756-1791) symphonies are there?

41

But recorded 71 – symphonies within serenades plus a newly discovered one K19a ‘Odense’ (composed in London at age 10) and one not by Mozart!

Neal Zaslaw, Christopher Hogwood, Jaap Schröder
Size of orchestra well known

1781 6 violin.1 6 violin.2 4 viola 3 cello & d.bass
2 oboe 2 clarinet 2 bassoon 2 flute
4 horn 2 trumpet 1 timpani 1 keyboard

Seating also well known

Orchestral strength: 15-14-4-4-8 / 2-2-2-2 / 2-2-1 / 2 harpsichords=50
AAM HIP decisions

1. Use 18\textsuperscript{th} century instruments
2. Observing all Mozart’s repeats restores some truncated movements to their correct proportions and yet because of lively tempos, do not seem too long
3. Missing instruments understood in 18\textsuperscript{th} century practice had to be supplied – bassoons playing the bass line along with cellos and double basses, kettledrums whenever trumpets are present, harpsichord or fortepiano continuo (harpsichord until 1784)
4. No conductor – direction divided between concertmaster and continuo player placed so that they see each other and be visible to rest of orchestra
5. Absence of a conductor does not mean that there is no interpretation. A different type of interpretation (‘democratic’) is derived by other means - close interaction between sections of orchestra
Mozart Clarinet Concerto K622 (1789-1791)

Mozart started it in 1789 as a concerto for a basset horn in G. Manuscript of this uncompleted part survives.

Version he completed two years later was in A major and for a very distinctive instrument many ways closer to basset horn than clarinet.

Concerto published in 1801 in an arrangement for normal clarinet in A.
Recreated concerto as Mozart composed it and had to recreate a now extinct instrument, basset clarinet. Nick Shackleton started with a clarinet in A of 1800 and added parts and extra keys so that reconstructed piece of music could be played, especially in lower register.
Mozart Keyboard Concertos 1767-1791

Wrote 20 keyboard (fortepiano) concertos and arranged 7 keyboard concertos (e.g. by JC Bach, the ‘London’ Bach)

Raised the musical form to new levels
How to perform them following principles of HIP?

Contemporary accounts indicate that Mozart was the soloist and usually directed from the keyboard. Scores indicate that Mozart allowed himself great freedom for improvisation. This is the creation a musical work, or the final form of one, as it is being performed. It may involve the work’s immediate composition by its performer(s), the elaboration of adjustment of detail in an existing work, or anything in between.
Improvisation is not a matter of letting whimsy run free – it is almost always a matter of keeping within certain very specific guidelines.

A jazz player would call it ‘staying in the changes’.

Church organists today regularly have to improvise, usually with a pre-existing melody.

Players who can do this well, know where they are and what possibilities are and are not acceptable.
Robert Levin (1947- ) (not to be confused with the Norwegian pianist (1912-1996) of the same name) is perhaps the greatest Mozart fortepianist alive today as well as being a great Mozart scholar.

Academic (Harvard University) and concert performer. Party trick is to be a short musical theme and he will improvise and expand it into a musical piece in the style of Mozart, Haydn, Beethoven, or Schubert!
Robert Levin, Christopher Hogwood, and AAM have recorded the 20 keyboard concertos (4 on harpsichord, 16 on different fortepianos) with full Levin improvisations. Major problem for Decca’s recording engineers as no repeated piece was ever the same!
Selection of instruments needed much thought as fortepiano was beginning to evolve

Concertos
1-4 (1766-67)
15, 16, 25 (1784-88)
9, 11-13 (1777-83)
5, 14, 16, 22, 23 (1775-86)
17-20 (1784)

Harpsichord 1764-1784
Mozart’s Walter fortepiano c. 1780
Stein fortepiano 1785
Walter fortepiano 1795
Walter fortepiano 1795
Haydn Symphonies

Franz Joseph Haydn (1732-1809) Austrian composer
Created the symphony and string quartets as we know them today

Composed 104 + A & B symphonies
1759-66: Music director to Count Morzin
1766-90: Music director to Prince Nikolaus Esterházy
1791-92 and 1794-95 visited London
1795-1809: Back at Esterházy composed The Creation and The Seasons
Haydn great diarist – extensive notes now edited and translated in 7 volumes

Orchestra size: chamber orchestra
1759-66: 13-16 players
  3-3-1-1-1-1, 2 oboes, horns, bassoon
1766-90: 16-18 players
  4-4-2-1-1, 2 oboes, 2-4 horns, bassoon
  Occasionally flute, trumpet, drums

Opening of Court Opera House at Esterházy
1780-90: 22-24 players
  6-5-2-2-2, oboes, horns, flute, bassoons, trumpet, drums

Bassoon doubled the cello and double bass parts
Was there a keyboard instrument in his symphonies prior to London in 1791?

1. No indication of any keyboard instrument
2. Scores have no keyboard parts, figures, or references
3. No evidence that Esterházy Court ever employed a separate keyboard or continuo player (other than Haydn himself)
4. Much evidence that Haydn led from the violin; by his own testimony he was good enough to be soloist in violin concertos
5. Finale of ‘Farewell’ Symphony (45) - each player has a little solo before leaving, but no keyboard music and ends with two unaccompanied violins
6. Aspects of style stronger and more desirable without a continuo orchestration
AAM recording
No harpsichord
Works are now delicate string symphonies (quartet plus horns and oboes)
Quite a revelation
AAM playing Haydn Symphony 19
at Esterházy Palace 1992
Visits to London in 1791-92 and 1794-95 arranged by Johann Peter Salomon (1745-1815)

Composed 12 ‘London’ symphonies - #93-104

Also ‘Paris’ symphonies 82-87 composed for the Concert de la Loge Olympique 1787
Haydn ‘presided’ at keyboard but the sources including those prepared under his direction, include no keyboard parts.
Just presided and conducted

Haydn did compose many keyboard works – sonatas, piano trios, etc

Odd keyboard not in his symphonies

HIP – many questions, often difficult to answer

Reconstruction of the plan of Haydn-Salomon concerts, London 1791–3
Beethoven Piano Concertos

Pinnacle of classical keyboard concertos

Ludwig van Beethoven (1770-1827), one of the greatest composers – 9 symphonies, 7 concertos, keyboard sonatas, string quartets, chamber music, etc. Reached **new musical levels**.

5 Piano Concertos

1795, 1798, 1800, 1806, 1809

Time of great development in fortepianos

in 1804
Fortepiano
- original made in 1698 by Cristofori
- 1747 Silbermann (played by JS Bach)
- 1750 Viennese school of Stein, Walter, etc
- 1760 London school of Broadwood, Stodart, & Backers
- 1785 French Erard
- 1805 Use of metal bracing to bear the tension of the strings
  Viennese school of Schantz, Stein, Graf, Fritz
- 1850-90 Modern grand-piano
What to play Beethoven Piano concertos (1795-1809) on?

Once decided on fortepiano, need to have orchestra to balance and not swamp fortepiano or be swamped

AAM HIP solution

Steven Lubin & Christopher Hogwood
Piano Concerto 1 in C major 1795 – Walter 1795

Piano Concerto 2 in B-flat major 1798 – Walter 1795

Piano Concerto 3 in C minor 1800 – Fritz 1818

Piano Concerto 4 in G major 1806 and 5 in E-flat major – Graf 1824
## Orchestrals used

<table>
<thead>
<tr>
<th></th>
<th>Concerto</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tr>
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<td>Second violins</td>
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<td>4</td>
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<tr>
<td>Violas</td>
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<td>4</td>
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<td>4</td>
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</tr>
<tr>
<td>Cellos</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Double bass</td>
<td></td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>6</td>
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<td>Flute</td>
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<tr>
<td>Oboes</td>
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<tr>
<td>Bassoons</td>
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<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>Horns</td>
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<tr>
<td>Clarinets</td>
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<td>2</td>
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<td>Trumpets</td>
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<td>0</td>
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<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Timpani</td>
<td></td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
In HIP have to balance the historical records of orchestral size with the solo piano

No hard and fast rules

Like science – not objective

Many subjective (and aesthetic) decisions!
What does HIP mean for Brahms, Schumann, Berlioz, Rachmaninoff, Mendelssohn, Chopin, Debussy, Saint-Saëns, Elgar, Delius, Bellini, Dvorak, Smetana, Wagner, Mahler, Tchaikovsky, et al.?

10-20 years ago, it was assumed by all symphony orchestras that they simply ‘knew’ how to play this music.

Use ‘period’ instruments especially brass, woodwind, and percussion; follow original scores; and forget 20th century performances. = HIP!

Results are surprising and exciting.
We are, of course, entering dangerous and contentious matters when we consider performance of 19th century music!
Roger Norrington (2002)

Both melody and harmony are enhanced, and a crucial nobility and innocence can emerge, even from tired old ‘warhorse’ symphonies. Classicism did not disappear overnight in 1828. Its continuing presence in the 19th century is something we neglect at our peril.
Are we at the end of Early Music or HIP?

Yes and no

Yes, as HIP is now taken for granted for Baroque and Early Classical music

No, much more to find out, especially for Classical and Romantic

Yes and no, in that ‘modern’ orchestras quickly adopt HIP ideas in bowing, tempos, articulation, use of vibrato, and phrasing. Reduce size of string sections or increase wind sections. Sit as originally planned. Old brass and timpani needed
The anti-HIP, anti-authenticity lobby continues

Alleluia to Authenticity 1981
Both edited volumes of ‘sceptics’ or major ‘opponents’ to HIP

Never refer to HIP, only ‘authenticity’
Richard Taruskin ‘The Pastness of the Present’

1984 Chamber Music Society of the Lincoln Center and AAM faced off on the stage of the Alice Tuly Hall “Battle of the Bands”.

One could hear dash and vigour from the AAM string players and poise and clarity in the New Yorker’s playing.

It was first-rate modern Bach from all. All of it was buoyant and very geometrical. Not ‘mainstream’ vs ‘historians’.

So why all the bloodshed and nasty comments? Why not simply recognise modern Bach for what it is and stop talking about authenticity?
Taruskin presents three main reasons why this controversy continues

1. some enduring early-music pioneer mythology
2. belated intervention of positivist musicology
3. ideology of our museum culture and fascination with the past

Forget authenticity! HIP is one (and not the only one) of performing Baroque, Classical, or Romantic music.

Palaeomusicology, close to my research interests in palaeoecology.
No longer have to consult ancient treatises by Quantz, Leopold Mozart, CPE Bach, etc.

Now a recognised and major part of musical education and music-making today
HIP in Ecology

Why do we need HIP in ecology?
Live in a world that varies continuously in space and time.

Natural variability operative over time scales of thousands and millions of years
- ice-ages
- plate tectonics
- mountain building
- evolution of biodiversity
- mass extinctions, etc.

Can reconstruct much of Earth’s history from the geological record – ‘Deep-Time’.
Quaternary palaeoecology deals with last 2.7 million years (‘Q-Time’) in which there have been many ‘ice ages’ and the evolution of *Homo sapiens*.

Now live in the ‘Anthropocene’ – recent period of time where Earth’s systems are dominated by anthropogenic activities

- industrialisation
- deforestation
- pollution
- habitat loss
- invasive species
- agriculture
- over-exploitation of natural resources

Global change ecology
Increasing rates of change in human activity
Global-scale changes in Earth system due to human activity.
Recent changes

Climatic Changes

Annual combined land and sea surface temperature anomalies (°C) for the period 1860-1999, relative to the average for 1961-1990 for the northern hemisphere north of 20°.

Warming mainly in winter. Increase of 0.8° C 1970-2000. Likely to continue, about 1.5-5.8° C in this century.
Fig. 1. Major components of global atmospheric change: (a) CO₂ enrichment (Keeling 1993: Fig. 2); (b) global warming with strong regional deviations as illustrated for the Alps (Beniston et al. 1997: Fig. 1); (c) the ozone column above 1900 m elevation in central Europe (Staehelin et al. 1998: Fig. 1) (D.u., a Dobson unit = 100 hPa·cm); (d) the mineral dust surface concentration (Moulin et al. 1997: Fig. 4); (e) wet nitrogen deposition as documented in glacier ice (Döschter et al. 1995: Fig. 1); (f) trends in N₂O emission (Mosier and Kroeze 1998: Fig. 2). All panels have been redrawn, after originals.
Need to study recent (50-100 years) ecological change

Not easy as no long-term ecological observatories. Longest such study is about 60 years.

Palaeoecological research very difficult for last 50-100 years.
Mechanisms and modes of studying environmental change over different timescales (modified from Oldfield, 1983)
Need to use documentary evidence and old ecological surveys

Do modern surveys of same areas as old ones

Re-Sample project of John-Arvid Grytnes, Jutta Kapfer, and myself

Other related projects in Norway by Kari Klanderud and in Scotland by Louise Ross (North-West Highlands) and Gordon Rothero (snow-beds)
The design of such re-sampling projects learns from HIP in music

1. Go to identical study areas
2. Use maps of the period of when the first survey was made (contours, footpaths, etc. can change)
3. Use field methods of the period
4. Use plant taxonomy and nomenclature of the period
5. Use field equipment (e.g. altimeters) of the period – no GPS in 1930!
6. Use laboratory analyses with the equipment of the period (e.g. soil pH, soil nitrogen)
7. Use any documentary records, field notes, etc. from the original investigators

In other words – HIP in ecology!
One thing deliberately **not done** is to take the old survey data into the field as botanists can too easily tick off species on a pre-existing list and then find extra species. Introduces potential bias – try to avoid this.
In the last 150 years, atmospheric CO$_2$ concentrations and global temperatures have increased, as have atmospheric nitrogen levels.

Are alpine plants responding to these changes?

Jotunheimen mountains of central Norway

24 mountains surveyed in 1930-1931 by Reidar Jørgensen

Re-located over 400 of his localities in 1998

Could see how flora had changed in 68 years

Kari Klanderud and John Birks
Reidar Jørgensen 1904-1985: 176 cm tall, 67 kg
Represented Norway in 1928 Olympics (Amsterdam) in the 1500 m final
Between 1927-33 held 6 Norwegian records for 800, 1500, 3000, and 5000 m.
First Norwegian to run 1500 m in less than 4 minutes (3.56 in 1929)
Also great ski-champion

Jørgensen 1932
Became a schoolteacher but kept exploring mountains until he was over 80. Great field botanist.

1978

Grandfather of contemporary Norwegian dancer Jo Strømgren
Kirken visited on 31 July 1931
Re-visited 30 June 1998
Recent changes in the altitudinal distribution of vascular plants in Jotunheimen, central south Norway

Recent increases in species richness and shifts in altitudinal distributions of Norwegian mountain plants
Kari Klanderud* and H.J.B. Birks

(1Department of Biology and Nature Conservation, Agricultural University of Norway, N-1432 As, Norway; 2Botanical Institute, University of Bergen, Allegaten 41, N-5007 Bergen, Norway, and Environmental Change Research Centre, University College London, 26 Bedford Way, London WC1H 0AP, UK)

Used maps and guide books (NTF) and floras of the time
Map of Jotunheimen, central south Norway, showing the 25 mountains studied by Jørgensen (1933) and this study. Three local glaciers are indicated by stars.
Changes in species numbers
- Little change
- Some increase
- Big increase

- 1930-31
- 1998
Some plants have extended their altitudinal limits in last 70 years by 200-300 m.

1. Dwarf-shrubs –
   
   Phyllodoce caerulea  Vaccinium myrtillus
   Empetrum nigrum  Vaccinium vitis-idaea
   Salix lapponum

2. Grasses –
   
   Festuca vivipara  Deschampsia flexuosa
Phyllodoce caerulea, Norway
Vaccinium myrtillus, Norway

Vaccinium vitis-idaea, Swedish Lapland
Empetrum nigrum, Norway

Salix lapponum, Scotland
Some summit plants have slightly **declined** in frequency in last 70 years (e.g. *Saxifraga cespitosa*, *Cerastium alpinum*, *Erigeron uniflorus*, *Ranunculus glacialis*) but none have gone extinct.

Decline because of **direct warming** or, more likely, **increased competition** from faster-growing species expanding from lower altitudes.
2. NW Scottish Highlands – Louise Ross
Vegetation survey made by the late Derek Ratcliffe (1929-2005) in 1956-58

Great personal friend. When he died I was left all his botanical notebooks, maps, specimens, etc.

Had been in the field together many times. Had a good idea of how he worked and his field methods.

Had all his notes for Plant Communities of the Scottish Highlands monograph of 1962
Still the major source of information about Scottish mountain plant ecology, species associations, altitudinal ranges, distributions, etc. An ecological 'classic'.

Attempted to buy it in 1962!
Besides being an outstanding botanist, Derek was also a leading ornithologist with particular interests in birds of prey like peregrine falcon, golden eagle, etc. Pesticides, DDT, and egg-shell thinning.

He also had a set of notebooks of his bird activities. Bequeathed to Des Thompson, another close friend.

By putting the two sets of notebooks together plus Derek’s maps, we could embark on a HIP re-survey starting in 2007.

Problem is how to relocate the Ratcliffe plots. Need both sets of notebooks.
For example, west of Beinn Dearg 8 June 1957
... up some cliffs to see eagle eyrie (bird notes)
... on way down saw damp, fertile grassland and surveyed 2 vegetation plots there (botany notes)
... visited a wooded gorge near main road to check on a buzzard nest (bird notes)

Can reconstruct his movements for the day from his notes and can establish where the stand of vegetation he sampled is from his notes, maps, grid references, altitudes, etc.

Louise Ross used field equipment, maps, etc from the original survey period.
Found considerable change in vegetation since 1956-58

In heaths – significant increase in grasses and related plants
## Winners …

<table>
<thead>
<tr>
<th>Species</th>
<th>Functional Group</th>
<th>Change in Abundance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Racomitrium lanuginosum</em></td>
<td>Bryophyte</td>
<td>+7.35</td>
</tr>
<tr>
<td><em>Trichophorum cespitosum</em></td>
<td>Graminoid</td>
<td>+4.49</td>
</tr>
<tr>
<td><em>Molinia caerulea</em></td>
<td>Graminoid</td>
<td>+3.01</td>
</tr>
<tr>
<td><em>Nardus stricta</em></td>
<td>Graminoid</td>
<td>+2.33</td>
</tr>
<tr>
<td><em>Eriophorum vaginatum</em></td>
<td>Graminoid</td>
<td>+1.63</td>
</tr>
<tr>
<td><em>Potentilla erecta</em></td>
<td>Forb</td>
<td>+1.57</td>
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<td><em>Luzula sylvatica</em></td>
<td>Graminoid</td>
<td>+1.47</td>
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<tr>
<td><em>Breutelicia chrysocoma</em></td>
<td>Bryophyte</td>
<td>+1.40</td>
</tr>
<tr>
<td><em>Erica cinerea</em></td>
<td>Dwarf-shrub</td>
<td>+1.36</td>
</tr>
<tr>
<td><em>Agrostis canina</em></td>
<td>Graminoid</td>
<td>+1.29</td>
</tr>
</tbody>
</table>
… and losers

<table>
<thead>
<tr>
<th>Species</th>
<th>Functional Group</th>
<th>Change in Abundance (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empetrum nigrum</td>
<td>Dwarf-shrub</td>
<td>-6.93</td>
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<tr>
<td><em>Juniperus communis</em> ssp. <em>nana</em></td>
<td>Shrub/tree</td>
<td>-4.17</td>
</tr>
<tr>
<td>Calluna vulgaris</td>
<td>Dwarf-shrub</td>
<td>-4.10</td>
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<tr>
<td>Hypnum cupressiforme</td>
<td>Bryophyte</td>
<td>-2.28</td>
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<tr>
<td>Mastigophora woodsii</td>
<td>Bryophyte</td>
<td>-1.62</td>
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<tr>
<td>Anastrepta sp.</td>
<td>Bryophyte</td>
<td>-1.55</td>
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<tr>
<td>Loisleuria procumbens</td>
<td>Dwarf-shrub</td>
<td>-1.36</td>
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<tr>
<td><em>Arctostaphylos uva-ursi</em></td>
<td>Dwarf-shrub</td>
<td>-1.27</td>
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<tr>
<td><em>Arctostaphylos alpinus</em></td>
<td>Dwarf-shrub</td>
<td>-1.27</td>
</tr>
<tr>
<td>Bazzania tricenata</td>
<td>Bryophyte</td>
<td>-1.15</td>
</tr>
</tbody>
</table>
Conclusions

1. Shift to more homogenous plant community composition in heath plots

2. Decline in dwarf-shrub and lichen cover and an increase of graminoids

3. Shift towards less specialisation and increased grassiness in summit plots
Causes of upland vegetation change

- Grazing pressure
- Burning practices
- Climate change
- Atmospheric N deposition
Second study in Scotland by Gordon Rothero on changes in high-altitude ‘snow-bed’ vegetation in eastern Scotland between 1989 and 2007. Not really HIP as Gordon Rothero did both surveys but his field experience was wider in 2007 than in 1989.

Problem of HIP – cannot avoid being influenced by one’s own experience including Beethoven played by the Berlin Philharmonic in 2010.
Rothero et al. (2007)
Rothero et al. (2007)
Main changes

1. Snow-beds diminishing
2. Soils becoming drier
3. Impacts of tourism (skiing, snowboarding, digging of snow-holes) greater, causing increased nitrogen and soil disturbance

Mixture of recent climate change and tourism impacts, particularly in winter and spring
3. Jostedalsbreen glacial forelands

Photo: Bjørn Wold

Knut Fægri

Nigardsbreen 'Little Ice Age' moraine chronology
Primary Succession after Little Ice Age

Photo: 1984

1912-30

1815

Mature Betula forest

Mature Betula forest

1770

1750

Mature Alnus forest
Nigardsbreen, Jostedalsbreen

1874

1900

1931

1987
Nigardsbreen, Jostedalsbreen

2002
Vegetation changes since ice retreat

20 years

80 years

150 years

220 years
Knut Fægri (1909-2001) surveyed glacial fore-fields in 1930 at 4 Jostedalsbreen glacial outlets

Established primary succession of plants on these glacial fore-fields. Major innovative piece of research, well ahead of its time. Poorly known – published in German in Bergen’s Museum Årbok and 255 pages long!
Re-surveyed the moraines in 1987 and 1990

Had to relocate the moraines that Fægri studied. Not always easy because of vegetation growth and extra moraines formed due to ice retreat since the 1930s.

Had Fægri’s maps, notes, and photographs plus his own suggestions. Partly HIP.
Maps of the moraines in 1930

Fægri 1933
Found consistent differences in the flora on the moraines
- partly primary succession since 1750 and 1930
- mostly drier habitats than in 1930

Several possible explanations

1. Climate change and/or land-use changes
2. Landscape now more stable, streams more mature and hence less flooding
3. Less water as glaciers are retreating and less meltwater, especially at the older moraines that are furthest from the ice today
4. Increased plant growth and development of forest has led to greater transpiration of water by plants, thereby making the soil drier
HIP-influenced ecological resurveys are providing very good evidence from many re-surveys of floristic analyses made in the 1900s-1950s and recently in Europe and N America that

1. Summit floras are becoming **more species-rich** as Montane species (e.g. dwarf-shrubs, grasses) move up mountains, presumably in response to climate warming

2. But evidence for **local extinction** of high-altitude alpine or sub-nival species is almost **non-existent**. Why?

   - **Strong** evidence
   - **Some** evidence
   - **Possible** evidence
   - **Range expansion**
   - **Range contraction** & **local extinction**

   - Nival
   - Sub-Nival
   - Alpine
   - Montane

   - No
   - No
   - ?


Why is there **little or no evidence** for local extinction of high-altitude species?

Need to assess an alpine landscape not at a climate-model scale or even at the 2 m height of a climate station, but at the **plant level**.

Use thermal imagery technology to measure **land surface temperature**.

Körner 2007 *Erdkunde*

Scherrer & Körner 2010 *Global Change Biology*

Scherrer & Körner 2011 *Journal of Biogeography*
Land-surface temperature across an elevational transect in Central Swiss Alps shown by modern thermal imagery. Forest has a mean of 7.6°C whereas the alpine grassland has a mean of 14.2°C. There is a sharp warming from forest into alpine grassland.

Körner (2007)
Furka Pass, Switzerland

One slope, huge thermal imagery variation showing varied network of micro-habitats

Scherrer & Körner (2011)
In two alpine areas in Switzerland (2200-2800 m), used infrared thermometry and data-loggers to assess variation in plant-surface and ground temperature for 889 plots.

Found growing season mean soil temperature range of 7.2°C, surface temperature range of 10.5°C, and season length range of >32 days. Greatly exceed IPCC predictions for future, just on one summit.

IPCC 2°C warming will lead to the loss of the coldest habitats (3% of current area). 75% of current thermal habitats will be reduced in abundance (competition), 22% will become more abundant.

Scherrer & Körner (2011)
Warn against projections of alpine plant species responses to climate warming based on a broad-scale (10’ x 10’) grid-scale modelling approach.

Alpine terrain is, for very many species, a much ‘safer’ place to live under conditions of climate change than flat terrain which offers no short distance escapes from the new thermal regime.

**Landscape local heterogeneity** leads to **local climatic heterogeneity** which confers **biological resilience** to change, as it did in the past by providing local **micro-refugia** for plants and animals in regionally unfavourable conditions.
Other HIP-influenced ecological re-surveys in progress

- aquatic plants and changes in lake water chemistry and lake levels
- bog vegetation and effects of atmospheric nitrogen deposition
- mountain vegetation in relation to climate change and grazing effects
- woodland flora and vegetation in relation to climate change and management practices
- changes in Himalayan vegetation since early 1950s
Conclusions About HIP

1. HIP has had a major influence on ideas about the performance of Baroque, Classical, and even Romantic music.

2. No attempt at authenticity, just one of many ways of performing and interpreting old music.

3. Cannot ever be authentic: cannot remove ourselves from the present-day with its culture, environment, etc.

4. My interest in HIP in music greatly influenced how we have gone about vegetation resurveys – HIP in ecology.

5. By applying HIP to ecology, help to minimise bias in our results because of differences in practice, methods, equipment, etc.
6. In music, it has been (and still is) an exciting journey of discovery since 1973 and the AAM.

7. In ecology, it has been (and still is) an exciting journey of discovery to stand where Jørgensen did in 1931 and to see what plants are still there (may actually be the same individuals as some alpines have long life-spans) and which have come in or have disappeared. Makes one realise that we live in a rapidly changing world.

8. In geology, basic philosophical concept is that of uniformitarianism as proposed by James Hutton (1795) & Charles Lyell (1830-33). The ‘present is the key to the past’. HIP suggests that we have much to learn from the past: not only is the present the key to the past and to the future, but the past is a key to the present and the future.
9. HIP in music and ecology shows the importance of invisible networks in science and the importance of different cultures meeting and of exploring these cultures.

10. Even within the umbrella of HIP in music, no two HIP musicians will agree on everything (e.g. size of Bach choir, use of keyboard in Haydn symphonies, pitch, etc). HIP is an approach to playing and interpreting great music. HIP is a means to an end. It is not an end in itself. Like science there are many subjective decisions to be made. Can be guided by history and by careful scholarship.
11. Even in the period of recorded music but pre-HIP (1900-1950), there are clearly changing tastes in instrumental and orchestral playing of Elgar, Rachmaninoff, Stravinsky, and others in terms of rhythm, flexibility of tempo, rubato, treatment of rhythmic detail, use of vibrato, and use of portamento by string players.

Fascinating that approaches have changed in just 50 years.
12. HIP in music is really musical palaeoecology or **palaeomusicology**. Not surprising that a palaeoecologist is fascinated by HIP in music.

13. Some people, myself included, have a **fascination with history**. It is part of us, inherently interesting and exciting.
Where Does the Debate about ‘Authenticity’ Stand in HIP?

Nicholas McGegan (1993) “There is only one assurance of authenticity and that’s when the composer performs his own music, and even that doesn’t always work. Any other performance that calls itself ‘authentic’ is actually the product of conjecture and game-playing.”
“There are aspects of past performance that can never be duplicated even if we wanted to (which I doubt). For one thing, our concert halls are much larger than their 18th-century counterparts, so that it takes a lot more noise, and a wider range of noise from soft to loud, to fill them. Even more important, there is the matter of audience. We can fashion the most authentic models of Handel violins and keyboards, train our singers to dispense with vibrato that serves them so well in Verdi, and end up with something which seems completely bloodless, because our audiences have heard Wagner and The Beatles and come to Handel’s music with expectations that Handel’s audiences never had. The most authentic quality we can put onto a stage in a recording is the love that went into creating that music, and that’s something that every performer, in every generation, must fashion anew. There is a line from ‘Corinthians’ that without love you are only tinkling a cymbal. We cannot just be doing that.”
Somewhat a surprise for me with my interest in HIP in Music and in Ecology to see this new book. On reading it, I feel “here we go again, back to the heated discussions as in the 1980s about authenticity in music.”
Three fascinating new books on HIP in music

ESSAYS IN HONOR OF CHRISTOPHER HOGWOOD

THE MAESTRO’S DIRECTION

Edited by Thomas Donahue

2011

EARLY MUSIC

A Very Short Introduction

Thomas Forrest Kelly

2011

IDENTITY

Contributors: Adrian Poots, Lionel Bentley, Peter Cruz, Marcus Du Sautoy, Philippa Marrack, Ludmilla Jordanova, Christopher Hogwood, Raymond Tallis

2010

Musical identity

CHRISTOPHER HOGWOOD

Musical identity begins where words leave off. Home reminds us. Many people would also consider that music, rather like the brain, still largely begins beyond the reach of science and technology. It is therefore a somewhat daunting notion to contribute to this series of essays, since I will surely be less scientific and my opinions more subjective — and in the end, I suspect (by the nature of the subject) less prescriptive — than most of the other approaches to identity in this volume. However, no formulae and few charts will be invoked, and only a minimum recourse to notation will be used in evidence. This would today seem a necessary precaution. The British Library, about to launch a nationwide tour of a newly acquired music manuscripts, recently discovered that 97 per cent of the British public cannot read music. Happily, although I am saddened to learn of such widespread illiteracy, there is no Delphic theory that the identity of a piece of music resides in its notation, nor, in fact, in any academic knowledge of its origins or context.
Of course, HIP also applies to Jazz ...

... but that’s another story!
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If interested in the origins and development of AAM and the influence that Christopher Hogwood had had on HIP go to