Sound check

Do machines and people handle the 'cocktail party effect' differently?
Prof Chris Darwin (BIOLS) and Dr Philip Denbigh (ENGG) are both tackling
the problem of how to separate one voice from background noise. Their research
differs as Chris studies human auditory perception, while Philip has sought an
engineering solution—he has developed a computer algorithm that processes two
microphone signals to enhance a speech signal from a selected direction.

Humans are remarkably good at sorting
out the mixture of sounds that come into the
ear into separately perceived sounds, each
with their appropriate location, loudness,
pitch and timbre. The human and the
computer algorithm both use interaural time
differences (ITDs) — the temporal difference
between a sound reaching each ear—as a
cue for locating a sound in space as well as
separating a target sound from unwanted
sounds. Both exploit the cue of spectral
features, for example the fact that voiced
speech has a spectrum that is confined to
harmonics of the speaker’s pitch.

This ongoing research could potentially
be used to develop more advanced hearing
aids, or as a 'front end' to a speech
recognition system. Practical difficulties
arise when the wanted and unwanted sound
sources are closely spaced, have similar
pitch frequencies, or if there are strong room
reflections.

In modern speech recognition software,
these difficulties are partially solved by
using directional microphones close to the
mouth and by customising the software to
one voice. However the problem of speech
segregation still exists for humans with
hearing impairments who find themselves
disadvantaged in cocktail party or
comparable situations, who cannot control
noise or move closer to the target source.

Professor Darwin has recently been
elected a Fellow of the Acoustical Society of
America, the main international
organisation for research into sound. He is
cited for his contributions to the
understanding of perceptual grouping
processes in hearing and speech.

Generating alternative energy

The School of Engineering has
acquired a research grant to study the
storage of energy generated by wind
power. A group headed by Professor
Jayawant has been awarded over
£350,000 under the
European Commission’s
alternative energy programme, JOULE.

Storage devices
used in parallel with solar and wind
turbine electricity
generators are
essential to smooth
out fluctuations in
wind and solar conditions. This grant will
be used to study the use of large diameter
flywheels running in magnetic bearings.

Past research has attempted to use
flywheels as back-up electricity supplies or
"mechanical batteries". Prof Jayawant and
his group, who have studied magnetic
bearings for 20 years, have proposed an
innovative storage system which will use
magnetic bearings with a suspended rotating

If music be the food of thought

THREE members of the Music subject
group will be speaking at a conference
on contemporary music next month.
Dr Robert Adlington, Dr Julian Johnson
and Prof David Osmund-Smith (CCS) will be
discussing the work of Theodor Adorno,
famous for his critical analyses of 20th
century music. A member of the Frankfurt
School of the 1920s and 30s, Adorno was
also a talented composer and sociologist,
tackling modern music from both a technical
and philosophical perspective.

The one-day conference, to be held at
Goldsmith’s College on 21 February, will
debate how Adorno’s theories are still
applicable to today’s compositions, with a
number of lectures, concerts and a round
table discussion with guests including
composer Brian Ferneyhough from the
University of California.

"Adorno was infamous for his cutting and
vindictive opinions of ‘popular music’," says
Julian. "He used the term ‘the culture industry’
to describe music which you experience
without having to think. Adorno believed that
society was in danger of losing something vital
in such a culture, and that the best art acts like
a gymnasium for the mind.

"His work on modern music is
particularly useful since it manages to bring
together the study of the nuts and bolts of
composition with wider questions of
aesthetic philosophy, sociology and
politics.”
In the Bookshop

Recent publications by Sussex authors, all obtainable from the University Bookshop.


THE DEVELOPMENT OF SENSORY, MOTOR AND COGNITIVE CAPACITIES IN EARLY INFANCY: FROM SENSATION TO COGNITION by Francesca Simion and George Butterworth. Psychology Press £49.95.

SOCIAL PSYCHOLOGY ACROSS CULTURES (second edition) by Peter B Smith and Michael Bond. Prentice Hall £17.95

News

Prinny
January 1998

Schools and subject groups consider the Rap -- the Report of the Arts Working Party on Structures

January 1811

Prinny is also rapt in thought...

I would dearly love to talk to you at length about this and that but I am forced by His Majesty to consider the structure of my Household. Apparently, His Majesty has paused from his usual pastime of running around Windsor in his shift and consulted with the terrifyingly dull Mr Pitt. Pitt, a dreary chap with a loaded abacus, has determined that a reorganisation of my Household would benefit my ability to act as Prince of Wales. He has presented His Majesty with five options: one, that my Household is run as one large unit with some lackey holding the purse-strings; two, that the sub-divisions of bedchamber, outer bedchamber, bath, kitchen, stables and grounds be run independently (what chance of a clean cravat in that mess, eh?); three, that the Household is split into two crude groups -- indoors upstairs and outside downstairs; four, a Household in three parts -- bedchamber and bath, kitchen and staff, and stables and grounds; and finally, to leave things as they are.

Of course, I'm not being allowed to choose the final option but I simply don't have the time to consider the other options carefully -- His Majesty is insistent on a prompt response. How I envy the steady, unruffled life of the academic!

BRINGING SMOKERS IN FROM THE COLD

Nowadays, smokers have to huddle outside, in all weathers, to engage in their dangerous and antisocial activities. Now, however, some BIOLS smokers are to be invited in from the cold to take surreptitious puffs under experimental conditions. They will be helping in a project by undergraduate Emma Shepherd, working with experimental psychologist Dora Duka. The aim is to understand why people smoke: what cues induce the urge and which is more potent, nicotine or habit? What part does conditioning play and how does it contribute to the power of advertising and sponsorship?

The experimenter will provide the cigarettes and a chance of winning a £20 prize. It is to be hoped that the research will help prevent further weak-willed people from following this slippery path to social exclusion.

At the Gardner Centre

Film
Monday 2 February
7.30 pm My Own Private Idaho (15)
Sunday 8 February
3.00 pm Austin Powers: International Man of Mystery (PG)
6.00 pm Big Night (15)
9.00 pm Apocalypse Now (18)

Theatre
Friday 6 February 7.45 pm
Volcano Theatre present After the Orgy. This wildly extravagant multi media event is fast, flashy, fun and very loud.

FREEBIES for the Volcano Theatre to the first 10 people to present themselves at the box office with this Bulletin.

3333
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The Safety Office would like to remind everyone on campus that they should not hesitate to use the emergency telephone number 3333 for first aid incidents involving chemicals. Incidents have occurred recently where local first aiders have been sought before calling for the mobile occupational first aiders, and valuable time has been lost in helping casualties.

By dialing 3333 on an internal phone expert assistance can be summoned and can arrive within two minutes of a call being made. Local first aiders, who may be anywhere in a large building, can take much longer to alert.

The Safety Office wish to remind everyone that 3333 can be dialled in order to call the Health Centre Defibrillation Team, the University Rescue Team, and Security, as well as to report major incidents. Any genuine call will not be met with criticism.

3333 is a 24-hour number. Its use ensures that any external emergency service (ambulance, fire brigade, police) can be met at the entrance to the University and escorted to the exact location on campus.

Emergency telephones are located at strategic points throughout the campus.

Helen Bickerstaff

Helen Bickerstaff died on 21 January after a long illness. Helen had been Assistant Librarian in the University Library from 1978 with periods of secondment on projects in the Sudan, Papua New Guinea and Sierra Leone. In recent years her duties included being liaison librarian for the English Subject Group and responsibility for the Library's rare books collections.
New Face  

Charles Lees – Lecturer in EURO

Having appeared on the German equivalent of Top of the Pops, Charles Lees is justly proud of his drum kit.

When a new member of faculty admits to being a rock musician "in a previous life", it is easy to see how Sussex maintains its reputation for diversity. Charles spent eight years in West Berlin before reading for a degree in European Studies at Thames Valley University, an MA at the University of Essex and a doctorate in Birmingham. He has just submitted his PhD thesis, which discusses red-green (i.e. social-democratic and green political party) coalitions in the Federal Republic of Germany.

He started teaching international relations and politics in EURO in October. He enjoys the teaching aspect of his job and relishes the prospect of lively debates with students. "Metanarratives are in decline – no-one talks about Marxism or justice anymore," he laments. "Students are passionate about single issues like fox-hunting and the environment, and all those 'nuts and bolts' issues."

In his spare time, he can be found in pubs and clubs, including the golfing sort, and occasionally visits the "ridiculously expensive" health club across the road. His office boasts a variety of unusual souvenirs tucked between the obligatory broken coffee machine (a must for the modern arts tutor) and some specialist journals. A copy of Larry Hagman's "Stop Smoking For Life" video and a collection of toy Trabant cars add a certain ambience. Apparently the Trabant is the German equivalent of the Lada – it even has an appreciation society based in Brighton.

As Charles left Germany two weeks before unification, Bulletin asked if he owns a chunk of the Berlin Wall. "Yes, and the famous picture of the moment the wall was lifted is fake. There were Japanese TV technicians who made them put the wall back up because it was lifted too early for their live broadcast. It's true, I was there," he says.

Rodent rumpus

An observant Bulletin reader has spotted our resident columnist, Cyril Squirrel, moonlighting. The naughty rodent has indulged in common pilfering on a London housing estate with his gang of furry friends, as reported in The Times (see right).

We regret to report that Cyril is not hibernating as previously claimed in Bulletin. Described as "a particularly aggressive individual" by his victims, Cyril and his cohort have been breaking into houses, intimidating people and rifling through unattended bags.

We are confident that Cyril is sorry for his actions and will return to comment on University happenings later this term.

In brief

Research Opportunities

More details of these and other research opportunities are available from Mylene Powell in the Research Grants and Contracts Office, ext.3812 or email M.Powell@sussex.ac.uk.

THE NON-AUDITORY EFFECTS OF NOISE ON HEALTH: The Institute for Environment and Health call for outline proposals. Key areas are: the effects of noise on the cognitive development and reading skills of children; the possible relationship between exposure to noise and the cardiovascular system and psychiatric disorders; the relationship between noise and annoyance and sleep disturbance. Deadline: 13 February 1998.

SAINSBURY SUMMER STUDENTSHIPS IN PLANT SCIENCE: to allow promising undergraduates to gain experience of scientific research in well-equipped laboratories. Deadline: 19 February 1998.

WELLCOME/HEFCE JOINT EQUIPMENT: applications invited for this initiative that funds items of up to £2M providing collaborative, multi-disciplinary facilities. No deadline given.

EPSRC NEW PHYSICS NETWORKS: three new physics networks are being funded to bring together leading UK researchers and groups in academia and industry to stimulate new ideas: Quantum Optics Network; Network for Liquid Matter; Soft Condensed Matter. Deadline: 4 March 1998.

MAJOR AWARDS FOR POPULATION STUDIES IN CENTRES OF RESEARCH EXCELLENCE IN ASIA: The Wellcome Trust invites proposals to develop innovative population-based research and provide an expansion in research capacity and training opportunities in key disciplines. Deadline for preliminary proposals: 6 March 1998.

EPSRC MULTIMEDIA: The EPSRC has called for proposals in its multimedia and networking programme. Proposals addressing any programme area are welcome, either conventional long-term research, or collaborative application-orientated projects. Deadline: 30 March 1998.

For an extensive listing of funding opportunities see REFUND linked to the Research web site: http://www. sussex.ac.uk/Units/ research or USIS Home Page, select 'Teaching & Research', 'Research Funding at Sussex.'
Monday 2 February
12.30 pm Sussex Continuing Education Research Forum: Brian Street (Kings College, London) Adult literacy in the UK: the end or the beginning. Room D310
1.00 pm Experimental Psychology Seminar: Jonathan Goodacre, Psychophysics, psychophysiology and auditory cognition. Biology Lecture Room (EP 3.9)
2.00 pm Centre in Global Political Economy Seminar: Mick Dunford, Mary Kalidor, Ronen Palan, Martin Shaw and Gordon White, Contemporary perspectives in global politics. Roundtable. Room A71
3.00 pm Centre for Mathematical Analysis and its Applications Seminar: Yu Semenov (Toronto University) On perturbation theory of linear elliptic and parabolic operators: the method of Nash. Room Pevensey 2A2
4.00 pm CULCOM Lecture: Sally Munt (University of Brighton) Lesbians in space. CCS Common Room
5.00 pm Sociology and Social Psychology Seminar: Pat Ainley (University of Greenwich) Towards a learning or a certified society?: Learning policy for further, higher and continuing education and training. Room D310

Tuesday 3 February
12.30 pm Sussex Life History Research Seminar: David Stephens, What can life history tell us about real life in developing countries? Room A71
2.15 pm Sussex European Institute Research in Progress Seminar: Philippe de Schoutteete, From Maastricht to Amsterdam: a comparison of two inter-governmental conferences on reform of the European Union. Room A71
4.00 pm COGS Seminar: Matthew Elton (University of Stirling) Should vegetarians play video games? Room COGS SC11
4.15 pm Biochemistry, Genetics and Development Seminar: Ernest Lau (University of Cambridge) Protein-protein interactions in cellular control. Biology Lecture Theatre
4.30 pm Social and Political Thought Seminar: Richard Altvater, The metamorphoses and centrality of labour today. Room D630
5.00 pm American Studies Seminar: Rick Crownshaw (Goldsmiths) The US Holocaust Memorial Museum: trauma, architecture and the nationalisation of the holocaust memory. Room D730
5.00 pm Social Anthropology Seminar: David Forrest, Leen, the Pingouiro and the sugar ration: sex, sexuality and masculinity in contemporary Cuba. Room D722
5.00 pm New Metaphysical Art Seminar: Roger Poole, Husserl and The Crisis of European Sciences (1936). Room EDB 302
5.15 pm German Research Colloquium: Luke Holland (Brighton University) Good Morning, Mr Hitler, anfilm screening and discussion. Room A2
5.00 pm International Relations and Politics Seminar: Richard Phillips, Beyond antiracism: a neo-Veblenian analysis of inter-business organisation and industrial change. Room D640

Wednesday 4 February
1.00 pm IDS Environment Group Seminar: Anurachha Joshi, Progressive bureaucracy: an oxymoron? The case of joint forest management in India. Room IDS 221
1.30 pm Sussex Centre for Optical and Atomic Physics Seminar: William Allison (Cambridge University) An atom-focusing mirror. Room Pevensey 2A2
4.00 pm Applied Mathematics and Numerical Analysis Seminar: Vincenzo Radulescu (Cratoa, Romania) Asymptotics and pinning of vertices for the Ginibre-Laudau equation. Room Pevensey 1A1
4.00 pm Music Graduate Research Seminar: Tazal Tajuddin, Introducing his own music and talking on the influence of traditional Indonesian music. Recital Room, Falmer House
4.30 pm History of Art Work in Progress Seminar: Yuko Kikuchi (Chelsea College of Art and Design) Mingei theory: the orientalisation of tradition in modern Japan. Room A5
4.30 pm Centre for Legal Studies Seminar: John Harrington (Warwick University) Medical pluralism and the law in Tanzania. Room D610
5.00 pm English Graduate Colloquium: No speaker open meeting for all research students in English followed by a (modest) party. Room D640

Thursday 5 February
11.30 am Economics Seminar: David Fielding (Nottingham University) Testing between alternative models of investment - an illustration from South Africa. Room D310
4.00 pm Geography Research Seminar: Robert Allison (University of Durham) Weathering effects on rock and sediment geotechnical properties and the geomorphological implications. Room D610
4.00 pm Experimental Psychology Colloquium: Martin Jarvis (UCL) Nicotine addiction: biological, psychological and social determinants. Biology Lecture Room (EP 3.9)
5.00 pm Sussex Development Lecture: Brian Street (Kings College, London) Literacy and development: theory and practice. Room A1
5.00 pm Centre for Modern French Thought Seminar: Martin Crowley (Manchester University) Strange meeting: encountering the ethical in Blanchot and Wayne C Booth. Room A71
5.00 pm History Work in Progress Seminar: Kristin Doern, Hannah More: drink and the destruction of society. Room A155
5.00 pm Centrefor Statistics and Stochastic Modelling Seminar: David Balding (University of Reading) Reconstructing human history from DNA data. Room Pevensey 2A2

Friday 6 February
2.00 pm SPRU Seminar: John Barrett (National Air Traffic Services) The development of the UK's new air traffic control centre. Room EDB 121
4.00 pm Astronomy Centre Seminar: Andrew King (Leicester University) Driving over the limit: how to make type Ia supernovae. Room Anundel 410
4.30 pm Philosophy Society Seminar: Sabina Lovibond (Oxford University) On being the author of a moral judgement. Room A155

Small Ads
TO LET: one-bedroom flat on London Road with off-street parking. Spacious, comfortable, suit single/couple, £410 p.c.m. Contact 509035
HOLIDAY ACCOMMODATION TO LET: B & B in rural French farmhouse, £17.50 per night, delicious local produce, 16 km from spa town, vacant between June and September, French and English lessons also available. Contact 601068
TO LET: large sunny room with own toilet in friendly house with cat, near buses and shops, £48/week incl., available from 1 February for four weeks, then option to move with owner to similar house in same area. Contact 601068
ACCOMMODATION WANTED: preferably quiet and cheap studio flat for visiting research fellow and wife between February and May/August. Contact ext 2620 or e-mail: tapd6@central.sussex.ac.uk
MATHS/ENGINEERING TUTORING: PhD student available to teach maths and engineering. Contact 246281 or e-mail: m.j.brice@sussex.ac.uk
FRENCH TUTITION: up to GCSE level, reasonable rates. Also dissertations typed, contact 570117

Bulletin
The Bulletin appears every Friday, offering news and deadlines extending the preceding Friday lunchtime. We welcome any suggestions for news, events, letters and small ads. Please contact the Information Office, Sussex House on ext. 8209 or e-mail: Bulletin@sussex.ac.uk