

**NEWS RELEASE
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VLV's Audibility of Speech on Television Project will make a real difference

People with hearing difficulties could soon benefit from adjustments to be made to the sound quality on TV programmes, thanks to research undertaken by Voice of the Listener & Viewer (VLV), the BBC and RNID in 2010.

The survey results have shown that with greater awareness and subsequent relatively minor changes in production practices, it should be possible to ensure increased audibility for people, especially those who are hard of hearing, and thus improve their enjoyment of television programmes.

VLV undertook the project in response to the frequent and large number of complaints received for many years about inaudibility of speech in television programmes. VLV President Jocelyn Hay said "this is the most common complaint VLV receives and VLV is extremely grateful to all those who have given their expertise to help solve it including the BBC, Channel 4, hearing aid manufacturers Widex and an anonymous donor. Without their help it would not have been possible. Now we hope that as a result millions of people, currently unable to enjoy television programmes fully, will be able to do so in future. "

The VLV research project was initiated and directed by Dick Bates, Peter Menneer and David Walker, all former BBC senior executives, who volunteered their services for the VLV project. Dick Bates said "when I started this I thought the overwhelming problem was background music, but the research has revealed other problems, most of which could be avoided with a little more care during shooting."

Working with the BBC and RNID, the surveys were undertaken over 2010. The first phase was to establish how many people have problems in hearing the spoken word on television; to what extent such difficulties are related to age – and therefore to increasingly impaired quality of hearing; to identify particular TV programmes that had posed audibility problems to their audiences for subsequent audio analysis by the project's engineering specialists and to establish the detail of the audibility difficulties that people experienced with these particular programmes.

The VLV speech audibility questions were carried on both the BBC's *Pulse* online panel with an average reporting sample per day of around 8,000 and in a supplementary paper diary commissioned by VLV for a sample which produced 506 effective diaries from people aged 65 and over, who do not use the internet. 1,000 questionnaires were also completed by members of RNID. The data relates to programmes viewed over the week ending 20 August 2010 on BBC One, Two and Four, Channel 4, Five and ITV.

After the initial survey 21 programmes were analysed in detail, establishing that the majority of audibility problems resulted from the way in which sound is captured and that added background music makes audibility even worse. The BBC then took short clips of

nine programmes to test – one version as originally made, one with a one point increase in background sound level and one with a one point decrease. People really noticed the difference when the level of background sound was reduced.

VLV is delighted that the BBC has been so keen to engage with research on television audibility. Danny Cohen, Controller BBC One, has supported the project and said “The BBC has listened to its audience and worked hard to understand fully the different issues that viewers have with television sound. I am delighted that the BBC has created a series of comprehensive 'best-practice' guidance to support its producers and the wider production community to make clear, well-crafted television sound. I am particularly grateful to the support the Voice of the Listener and Viewer and RNID and its membership has given us to help make this a reality.”

This is a major breakthrough, especially for those who are hard of hearing – their enjoyment of watching television programmes will be greatly enhanced.

From:

Dated: 15 March 2011

Notes to editors:

Voice of the Listener & Viewer (VLV) is an independent, non-profit-making association, free from political, commercial and sectarian affiliations, working for quality and diversity in British broadcasting. VLV represents the interests of listeners, viewers and new media users as citizens and consumers across the full range of broadcasting issues. VLV is mainly concerned with the structures, regulation, funding and institutions that underpin the British broadcasting system. VLV does not normally handle complaints but it is concerned with trends and in 2009 the upward trend of complaints in this area was unmistakable.

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More detailed findings from the surveys can be found on VLV's website at www.vlv.org.uk

Acknowledgements

The supplementary sample (of those aged 65 and over who are without internet access) would not have been possible without the generous financial support of Channel 4, Widex (a leading Danish hearing aid manufacturer) and a private donor.

GfK NOP was the research company for both the BBC Pulse online panel and the VLV supplementary paper diary project amongst people aged 65 & over who do not use the internet.

PHASE ONE:

The Audibility of Speech on Television – Summary of Research Findings

This research was under the direction of Peter Menneer, the BBC's head of broadcasting research 1979-92.

1. Medical Research Council statistics demonstrate that quality of hearing is very much a function of age:

| <u>Adults aged</u> | <u>% with mild, moderate, severe or profound hearing loss</u> | |
|--------------------|---|-------------|
| 16 – 60 | 6% | |
| 61 – 80 | 47% | |
| 81 & over | 93% | Source: MRC |

It was therefore important to ensure good research coverage of the elderly for this investigation, including the 7 million aged 65 & over who do not use the internet.

2. From the VLV sample of people aged 65 & over, a strong relationship was established between how they described the quality of their hearing and whether or not they had any difficulty in hearing the spoken word:

| <u>Self-assessed quality of hearing:</u> | <u>% of viewing for which they reported difficulty in hearing the spoken word</u> |
|--|---|
| | % |
| Very good | 2 |
| Good | 3 |
| Moderately good | 12 |
| Poor | 18 |
| Very poor | 27 |

Those who said their hearing was “very poor” reported difficulties in hearing speech for over a quarter of the programmes they viewed. By contrast, audio difficulties were only reported for 2% of programmes viewed by people who said their hearing was “very good”.

3. Across the VLV sample of 65+s as a whole, 29% of programmes posed speech audibility problems to at least 10% of their viewers.

4. The research project went on to identify 22 particular programmes that had posed significant audibility problems to their respective audiences. The combination of two separate parallel research projects (the BBC’s online panel and VLV’s supplementary diary enterprise - see Technical Note below) shows the age profile of those who had difficulty in hearing the spoken word on these programmes – and how this differs markedly from the profile of the population as a whole:

| | <u>UK Adult Population</u> | <u>Those having difficulty in hearing speech in these programmes</u> |
|---------|----------------------------|--|
| | % | % |
| 16 – 49 | 57 | 13 |
| 50 – 65 | 33 | 23 |

65 & over

$\frac{20}{100}$

$\frac{53}{100}$

Pensioners (aged 65+) comprise 20% of the population, but account for more than half of the viewers who had difficulty in hearing speech in these programmes. Very few of the problems in hearing the spoken word on television arose from people under the age of 50.

5. For each programme for which the BBC and VLV respondents reported speech audibility problems, they were invited to describe these in their own words. In aggregate across the 22 principal problematical programmes:

- Foreign accents and dialects @ 19% were the explanations most often cited
- Background noise and background music @ 13% & 11% respectively accounted for a quarter of the problems encountered
- Mumbling and poor diction @ 14%
- and talking too fast @ 11%

These difficulties between them accounted for two thirds of the problems that viewers cited in their own words when they were faced with difficulties “in hearing what people were saying in this programme”.

6. The elderly, about 40% of whom described their hearing as less than good, have a particular problem with background music - @20%. It is also interesting to see how they cited shouting and screaming and audience laughter and applause as creating difficulties for them in hearing the spoken word.

7. This research set out primarily to investigate the difficulties that people have in hearing the spoken word. Beyond these sound mixing challenges for the programme maker, there is the separate issue of how background audio effects contribute to or detract from a programme's appeal to its audience. In this context it was interesting how respondents from time to time resorted to the emotive use of CAPITALS when complaining about background music in a programme.

8. 18% of the VLV diarists acknowledged that background music to programmes usually ‘adds to their enjoyment’ of TV programmes. The majority of them (52%), however, said that background music usually ‘reduces their enjoyment’ of TV programmes. To these people, background music can be ‘too loud’ and ‘distracting’ and ‘unnecessary’, ‘creating problems in hearing what people are saying’.

9. There is clearly some resistance to the use of subtitles. Amongst those VLV diarists who described their hearing as (only) ‘moderately good’ or ‘poor’, two thirds never use subtitles. Amongst those who said their hearing as ‘very poor’, as many as a third never use subtitles.

PHASE TWO:

The Audibility of Speech on Television – Analysis of Problems

This detailed work was carried out by Louise Willcox, (DWR Associates) a highly knowledgeable senior sound supervisor with many years' experience of recording, balancing and dubbing television programmes in the studio and on location and by David Walker, a senior audio, electronics and acoustics engineer. DVDs of the programmes were provided by BBC and Channel 4 for their networks, ITV1 and Channel 5 programmes were recorded off-air, ITV from Freeview and Channel 5 analogue terrestrial.

Background about hearing sound

1. 10 to 20% of what we hear is confirmed by watching people's lips, especially in noisy environments.
2. A pause as short as a breath before uttering the next sentence, or cutting to the next item is also used as a thought pause, which allows the brain processing time. It is as if the brain is saying "that's just finished, that's what it is about, now on to the next thing". Thus, fast –paced editing can actually make things difficult to hear, no matter how well recorded, if the brain has not been given enough time to process the information.
3. Popular music usually has a much smaller dynamic range than classical music, because it is compressed. Compressed music sounds subjectively louder than wider dynamic range music even if the peak level is the same on a PPM.
4. Music manipulates the emotions, which is why it is used in drama. Fast music generates a feeling of urgency. Slow music has the opposite effect.
5. Background music with lyrics needs to be at a lower level than without because it is a further distraction to the listener, who will often tune in to the lyrics rather than the spoken word.
6. Dramatic speech normally has a greater dynamic range than for instance, the dialogue in a quiz show.
7. Male voices are usually louder than female voices. Testosterone makes a man's vocal chords longer usually resulting in a deeper tone, and gives a man one third more muscle power than the same build woman, increasing the power of the diaphragm, the muscle that pushes air through the vocal chords. Ergo, women actors will lose out in a two-hander with a man unless they project more.
8. A female voice has most power in the higher frequencies. High frequencies are most commonly lost when we lose our hearing so many of those who are hard of hearing find female voices more difficult to understand than male.
9. Consonants convey the meaning in speech and are transmitted in the higher frequencies. With high frequency loss (whether hearing or in the recording), speech is difficult to decode.
10. The ear is sensitive to defects in sound. It will, for instance, notice a quite short gap in the sound, and have difficulty "bridging" deficiencies.

Lessons Learnt

1. Percussive music will punch through dialogue and must be added at a lower level than might be expected from its apparent loudness.
2. Care needs to be taken with music having a significant content in the speech frequencies as it will clash with the voice and have a masking effect greater than may be expected from its level.
3. Where music is used as a substitute for synchronous effects, care needs to be taken that it is appropriate in type and level. Inappropriate music will annoy the viewer and make them less sympathetic if dialogue gets difficult to understand. Not using incidental music as “wallpaper” must be a serious consideration.
4. The level of theme or signature music tends to set the listening volume for the remainder of the programme. If its loudness is relatively high this may give difficulties with the remainder of the programme.
5. A qualified sound recordist should always be used. If one is not available, the person responsible for sound must have training in basic sound recording techniques but the end result is unlikely to be as good as if a professional had been used.
6. Placing of personal microphones under clothing should be avoided at all costs, but when it is the only practical solution (e.g. drama) a qualified sound recordist must be employed.
7. Camera microphones should only be used for synchronous effects. A separate, high quality, microphone should be used for dialogue.
8. Where a live audience is present, the audience effects must be at a lower level than the contributors and must be managed to avoid overspill.
9. When an artist or contributor is giving a quiet vocal performance the producer should take the initiative in requesting more volume. He/she should coordinate with the sound supervisor in seeking a satisfactory solution.
10. The sound supervisor must feel able to request a retake if the artist or contributors performance is not adequate. More people in the audio chain need to feel able to raise comment or feedback.

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