QUALITY OF RADIO/TELEVISION WEATHER WARNINGS IN THE EYES OF THE AUSTRIAN PUBLIC

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(Dated: 23 August 2011)

I. INTRODUCTION

Media weather reports are the main channel of meteorological and climatological information to the general public. Their reporters, the media forecasters (see Fig.1), are key science communicators (Wilson, 2008) and reach a broad audience with a great variance in perception and motivation (Neumann et al., 1976; Ayton, 1988; Berland, 1994; Doswell, 2003). As weather presentation modes make the difference, even for professional users (Keul, 1980; O'Hare et al., 2009), evaluations are needed to test the presentation efficiency.

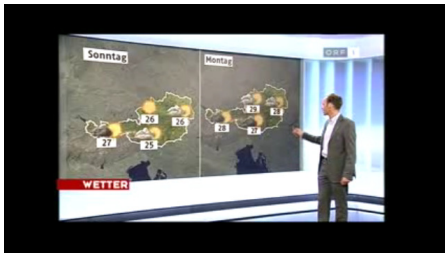

FIG. 1: Typical Austrian ORF television weather presentation.

Researchers have criticized that for a high-interest topic, recalled information by non-experts is rather low. Wagenaar et al. (1979) found out that of 12-32 items per message, only a maximum of 5-9 could be reproduced. Selective listening further reduced recalled items. Is it realistic to organize weather reports as datasets for an instant learning process? Or is it rather edutainment, enabling different users to extract highly individual contents?

Further research can help to optimize the format of weather news reports, particularly in the case of severe weather warnings. Existing tests were mostly done by weather professionals, only few by linguists (Shevchenko et al., 2006) or psychologists (Keul et al., 2009).

II. PRESENTATION OF RESEARCH

A 2008 Austrian pilot study (Keul et al., 2009) used historic radio messages about fair weather or a storm. Of 64 adults, 10% had no recall, 43% of general information, 47% of weather details. Males showed less recall for fair-weather, but better recall for the warning. Longer weather messages caused a recall of more (false) details.

In a bigger field experiment in the spring of 2010 in Salzburg City, Austria, a quota sample of 102 adults was interviewed on fair weather or a warning situation (Keul et al., 2010). The TV or radio reports used gave the latest weather forecasts of the given day. Subjects were not asked as in an exam but what they found important and could remember for their next-day use.

When asked about the use of weather report media, the percentages of main media (TV, radio, internet) showed similar proportions for fair weather and warnings. For severe situations, people reported less use of TV-text and newspapers and more SMS traffic (Tab.I).

	Normal	Warning
TV	76 %	60 %
Radio	81 %	71 %
Internet	69 %	57 %
TV-Text	46 %	29 %
Newspaper	26 %	7 %
SMS	3 %	7 %

TABLE I. Lay use of media meteorological information (percentages) in fair weather and warning situations.

Tab.II gives main quality items for the TV and radio samples – the legibility of the information.

Out of the TV sample, over 90% said they understood the fair-weather report and the warning. For three of four, the speed of the weather report was OK. Only 60% recalled their local prognosis (older people: 70%). About 50% would like to get more behaviour advice in case of severe weather.

Out of the radio sample, around 80% said they understood the fair-weather report and the warning. For two of three, the weather report speed was OK. About 65% recalled their local prognosis. Only about 30% would like to have more behaviour advice under warning conditions.

Item	TV sample	Radio sample
sample size	60	42
female/male	31/29	19/23
understood FW report	93%	77%
understood warning	100%	84%
report speed OK	75%	69%
recalled local prognosis	60%	64%
liked more behaviour advice	50%	31%

TABLE II: 2010 legibility.

Asking for more specific content, people had to rank different types of meteorological information for their subjective user interest by means of Austrian school marks (from 1 to 5). Tab.III displays the four top and the four last ranks. Temperatures, warnings and weather symbols were most important - singular events, lightning maps, lake and mountain temperatures were not.

Meteorological information	**Score**
Maximum temperature for next day	1,7
Forecast with weather symbols	2,0
Severe weather warnings	2,0
Minimum temperature for next day	2,1
…….	…..
Pictures/videos of extreme/bizarre events	3,3
Lightning detection map, recent hours	3,4
Water temperature of lakes in summer	3,5
Temperature for 3000 m alt. (mountains)	3,7

TABLE III. Top and lowest ranking (Likert scale, 1=very important, 5=not important at all) of meteorological data for Austrian media users.

What is the most interesting time scale for Austrian weather report users? In a similar ranking as in Tab.III, the very next day and the following day were of highest subjective importance, whereas longer periods were not.

Prognostic data	**Score**
Next day	1,4
Days 2 – 3	2,0
Next hours	2,6
Days 4 – 7	2,7
Long term trend	3,5

TABLE IV. Subjective scores (Likert scale, 1=very important, 5=not important) of prognostic data for Austrian media user.

Parallel to the weather report field experiment, an extensive questionnaire covering 56 items about weather interest and knowledge and socio-demography was distributed to quota samples in east Austria and at Salzburg (see Keul et al., 2011, this conference).

III. RESULTS AND CONCLUSIONS

In a subsequent discussion with the ORF weather forecasters, relevant practical conclusions for them were: Austrian TV weather reports are generally well-understood (as visual + speech channel), radio weather (speech only) is a more complex listening task. Standard weather reports run too fast for over 30% of the lay users. About 40% are not able to decode their local prognosis efficiently. Whereas visualization and variety of the weather reports have reached an optimum, their clarity and readability for all user groups can be developed further. It has to be emphasized that warning messages should be effective, address the right users and within the right time schedule.

IV. ACKNOWLEDGMENTS

Not all collaborators and workers of the Salzburg university cooperation project with ORF, the Austrian Broadcasting Corporation, were entered as authors here. The authors want to thank Peter Sterzinger (now retired) and the student volunteers S.Rudolf, A.Reinmüller, S.Messserklinger of 2008 and E.Dobos, J.Eberl, R.Geistlinger, L.Hacking, P.Häfele, K.Junglewitz, S.Kefer, J.Krenovsky, A.Lang, J.Mayer, V.Schwarz and I.Uhl of 2010.

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