Communication about a communication technology

Findings of the research project „Survey of the knowledge and effects of information activities in the field of Mobile Telephone Systems and design of further approaches to improve information of different sections of the population" funded by the Federal Office for Radiation Protection (Bundesamt für Strahlenschutz, BfS)

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Objectives and rationale of the research project

- **Emerging public discussion about risks of EMF in general, starting in 2000/2001 after a long period of establishing and successful diffusion of Mobile Telephones**
- **Questions about impacts of public risk debate for further acceptance of digital mobil communications systems (UTMS) (economical dimension)**
- **Questions about real risks and subjective risk perceptions (ecological and ethical dimension)**
- **Questions about new strategies for communications and determinants of risks and benefits (political dimension)**
- **Questions about determinants of individual perception and evaluation of information flow and differentiation of effects of impacts (scientifically dimension)**?

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Background

- **Ambivalence of Mobile Telephony:**

  highly used und accepted technology in Germany (80% of the German population have a mobile telephone („Handy“))

  since 2000/2001 a continuously arising of a general EMF debate about risks and health, according to mobile telephone base stations as a focus and concrete object of this discussion

- **Social Arena**

  The public is provided with information by politics, science, industry, the media and civil society in many ways with different interests

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Preliminary steps

Literature Research

Statistical Meta-Analysis

Media Analysis

theoretical framing of own qualitative (Focus groups) and quantitative (mass survey) methods

Five Focus Groups
- **Unworried persons**
- **Unsure persons**
- **Worried persons**
- **Experts and Decision Makers**
- **Interest Groups**

Mail Survey / Telephone Survey

Sample (brutto) = 4.000

Realised Interviews n=814*

(20% return quote)

347 (Mail Survey)

467 (Telephone Survey)

June, 16th, 05 – August, 26th, 05

*The low quota of participating respondents can be interpreted as a low interest for the EMF topic in the public and also for a lack of information, which can motivate people for more interest and knowledge

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Empirical investigations concerning information and communication measures of Mobile Telephony I

Qualitative investigation (Focus Groups):
Realisation and analysis of five Focus Froups (FG):

FG	Short term	Group members
1	Unworried persons	Citizens who are not worried about EMF of Mobile Telephony
2	Unsure persons	Citizens who are either unsure about possible health effects of EMF of Mobile Telephony or have not formed an opinion yet
3	Worried persons	Citizens who are worried about EMF of Mobile Telephony
4	Experts I	Representatives of the media, science and politics
5	Experts II	Representatives of Mobile Phone Industry and Action Groups/ Environmental Associations

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Empirical investigations concerning information and communication measures of Mobile Telephony III

Subjects / Topics of the Mobile Telephony Survey 2005:

- Risk perception (benefit, risk, acceptance)
- Knowledge (objective and subjective)
- Information behaviour (sources of information, etc.)
- Evaluation of text bodies from science, politics, Mobilephone Industry and Action Groups/ Environmental Associations
- Items concerning the generation of subgroups (unworried/unsure/worried people)
- Socio-demographic items

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Findings of Focus Groups I

FG 1 (unworried persons):

- **„Unworried“ ones** have not dealt with the topic yet.
- For them, Mobile Telephony radiation is negligible in comparison with other social and personal dangers.
- Personal involvement is missing.
- Their information on the topic EMF mainly stems from the mass media (passive acquisition of information).
- Scary stories and hysteria are ascribed to Mobile Telephony Opponents.

Findings of Focus Groups II

FG 2 (unsure persons):

- **„Unsure“ ones** are insecure especially due to ignorance of the real dangers of Mobile Telephony radiation.
- As in the case of the unworried people, passive acquisition of information also dominates in the group of the unsure ones.
- Unsure people searching for objective cognitive anchors about balanced information of risks and benefits
- The fact that science cannot make clear and reliable statements is therefore seen as very crucial in this subgroup.

Findings of Focus Groups III

FG 3 (worried persons):

- In the case of **worried persons**, personal involvement or latent fears lead to concern.
- They are sceptical towards scientific findings.
- „Worried“ ones use a lot of sources of information in addition to the media (passive and active acquisition of information).
- Politics is blamed for appeasing and playing down.
- Mobile Network Operators are stigmatized.
- In general, worried ones tend to give more negative evaluations of the actors.

Findings of Focus Groups IV

FG 4 (Experts I):

- Experts from **politics, media and science** see many communication channels and target groups for means of risk communication.

Communication channel	**Target Group**	**Problem**
Mass media	Public	Undetailed reports
School (teaching unit)	Students/parents	Overloaded curriculum
Internet	Internet users	Information overload, exclusion
Specific media offers like brochures	interested and/or worried persons	
Products (e.g. Blauer Engel)	Consumers	Accteptance by Mobilephone Industry
Information events	Interestes and/or concerned people	High costs/ practability
Trust / Credibility in the communicator		

Findings of Focus Groups V

FG 5 (Experts II):

- Representatives of the **Mobilephone Industry** and **Action Groups**/ **Environmental Associations** describe a municipal communication problem in the case of the location of the base stations. On the one hand operators assure to inform the municipalities sufficiently and in time. On the other hand Action Groups are not satisfied with the provided information. The flow of information seems to break off near the local officials (mayor, district council etc.).
- **Solution:** Development of precise procedures for the communes for the case when an operator wants to build a base station and gets in contact with them. A certain routine and reliability are supposed to be achieved by these guidelines.

Findings of Focus Groups VI

Perception of information material (overlaps):

- Both, citizens and experts, observed the **organized opponents of Mobile Telephony** sceptically. The one-sided, emotional and incredible exaggeration of the health risks by Mobile Telephony was a central feature of the information measures.
- **Science** was evaluated ambivalently by Citizens and Expert Focus Groups. On the one hand the presented information is perceived to be rather objective and credible. On the other hand, the contribution to the own judgment formation is classified as quite small. For the assessment of science this point was central for the citizens.
- The **Mobile Phone Industry** offers their information in a professional format, vivid and understandable. However, the material is evaluated as unbelievable, unidirectional and not objective

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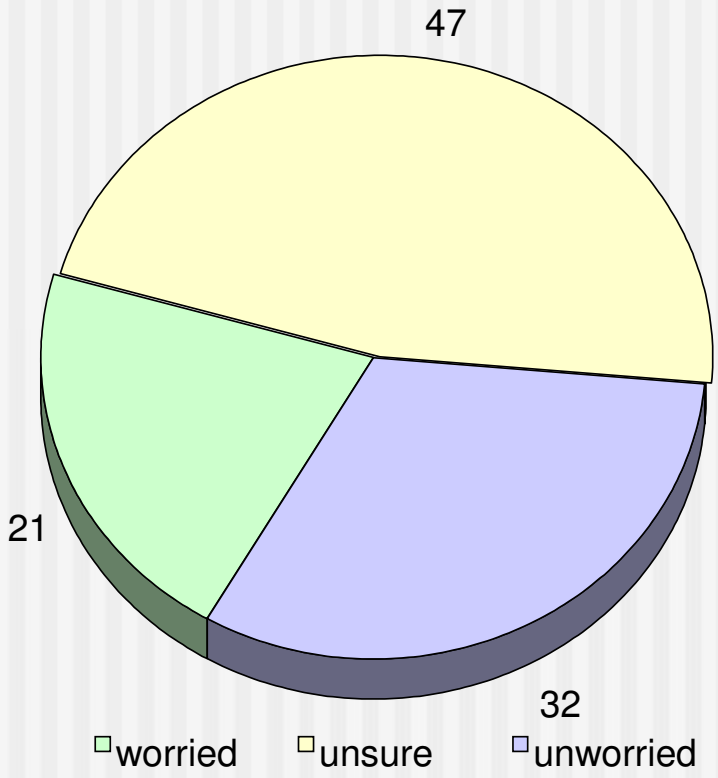
Results of Focus Groups VII

Perception of information material (differences):

- The theoretical presentation of the science community is evaluated negatively by the experts, whereas the citizens assess the simplicity of data presentation as good.
- Experts judged politics as good in all dimensions. However, citizens are split in their opinion. Internet sites and brochures are useful for them, but they miss a consistent position to form a reliable own view. They wish precise statements and action alternatives; at best a clear evaluation reference.

Results of the Mobile Telephony Survey 2005 I

Figure: Distribution of the sub groups in the survey



Source: Mobile Telephony Survey 2005 , n = 792, data in %

Results of the Mobile Telephony Survey 2005 II

Characterisation of the Public:

- Positive benefit/cost analysis in the case of mobiles.
- Ambivalent position to health risks of base stations.
- Mobiles are acceptable, base stations are refused.
- The knowledge of the public is rather low.
- People obtain their information most frequently by mass media, followed by social networks (acquaintances and friends).
- All texts in the postal survey of the four actors to the theme “Mobile Telefony and Health” are evaluated positively.
- In the telephone survey, arguments supporting participation were approved. Actors classifying Mobile Telephony as harmless were judged sophisticated. Science is labelled more persuasive than politics, which is evaluated more positively than the Mobile Phone Industry.

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Results of the Mobile Telephony Survey 2005 III

Characterisation of the Unworried

- Unworried show the most affirmative picture of Mobile Telephony: Benefit has the highest, concern about EMF the lowest values.
- Mobile phones and base stations are accepted.
- Moderate knowledge.
- Lowest usage of information sources.
- Postal survey: The Unworried judge the texts of the Mobile Phone Industry more positively than the other groups. Accordingly they reject the statements of the Mobile Phone Opponents.
- Telephone survey: All-clear, positive and benefit-orientated messages are appealing.
- Trust is an important indicator in evaluating the messages of the actors. Scientists are more trustworthy than politicians and representatives of the industry.

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Results of the Mobile Telephony Survey 2005 IV

Characterisation of the Unsure:

- Cost-value ratio of mobile phones is positive.
- Base stations seem to be judged ambivalently or unacceptable.
- Unsure have the lowest knowledge.
- Information behaviour is similar to the average population.
- Postal survey: The Unsure place themselves between the Unworried and Worried. They neither share the acceptance of the Mobile Phone Industry with the Unsure, nor the sympathy with the Mobile Phone Opponents of the Worried.
- Telephone survey: There is a trust effect. Risk evaluation of politics, science and industry is low. But the Unsure trust the messages of the scientists more than the arguments of the politics and representatives from industry.

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Results of the Mobile Telephone Survey 2005 V

Characterisation of the Worried:

- Lowly perceived individual benefit and high concern towards mobiles and base stations.
- Neither mobile phones nor base stations are accepted.
- Worried have the highest knowledge.
- They use the following information sources more often than the other groups: Mass media, friends and acquaintances, action and environment groups, science and consumer protection organisations.
- Postal survey: Worried evaluate the arguments of the Mobile Telephony Opponents more positively than the other groups and reject the statements of the Mobile Phone Industry.
- Telephone survey: negative, warning and sceptical arguments are attractive to Worried.

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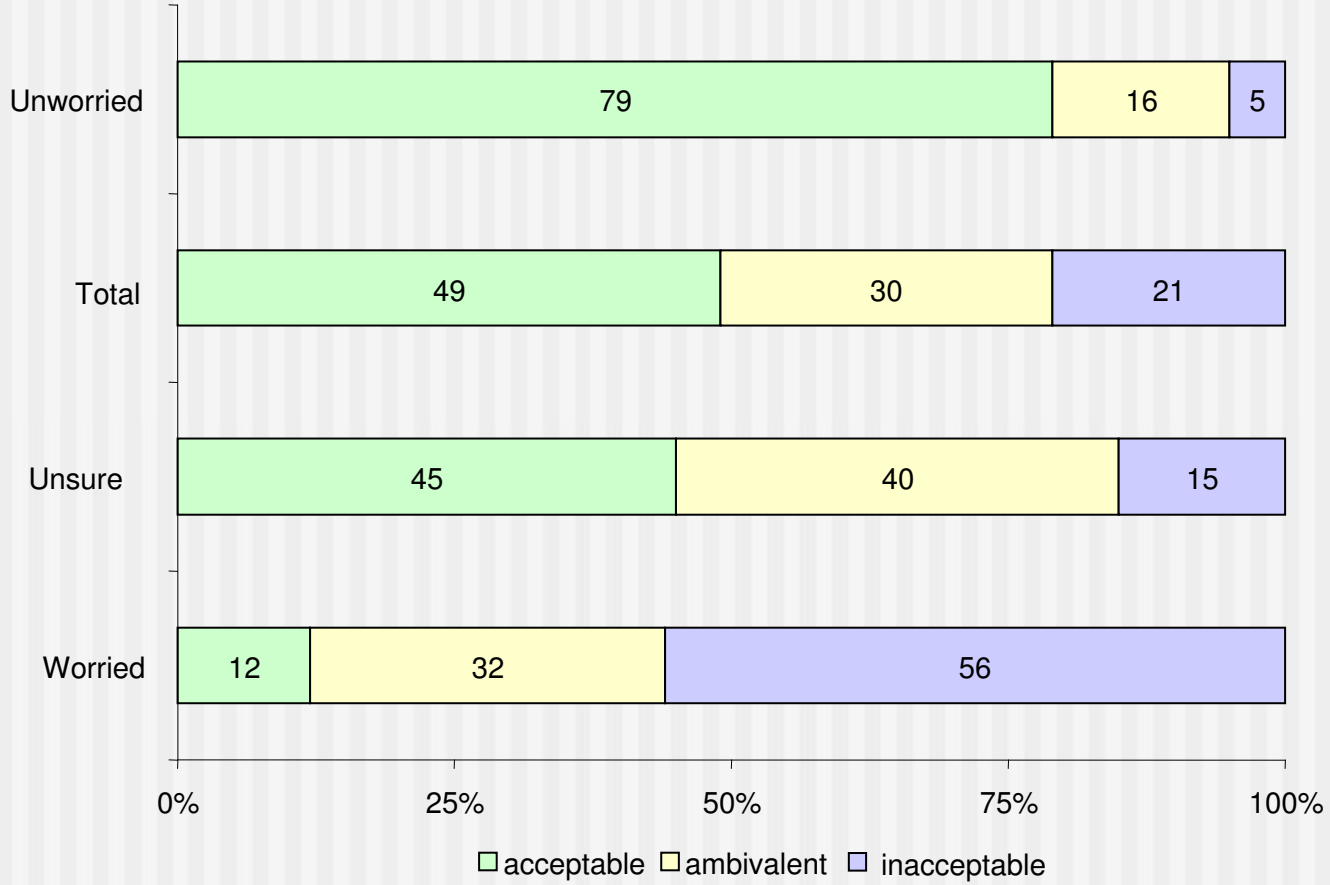
Results of the Mobile Telephone Survey 2005 VI

Figure: Acceptance of mobile phone risks in Germany



Source: Mobile Telephony Survey 2005, n = 814, in %

acceptable = 4,5 ambivalent = 3 inacceptable = 1,2

Subgroups: $Chi^2 = 253{,}778$ p = .000 df = 4 $C_{Korr} = .616$

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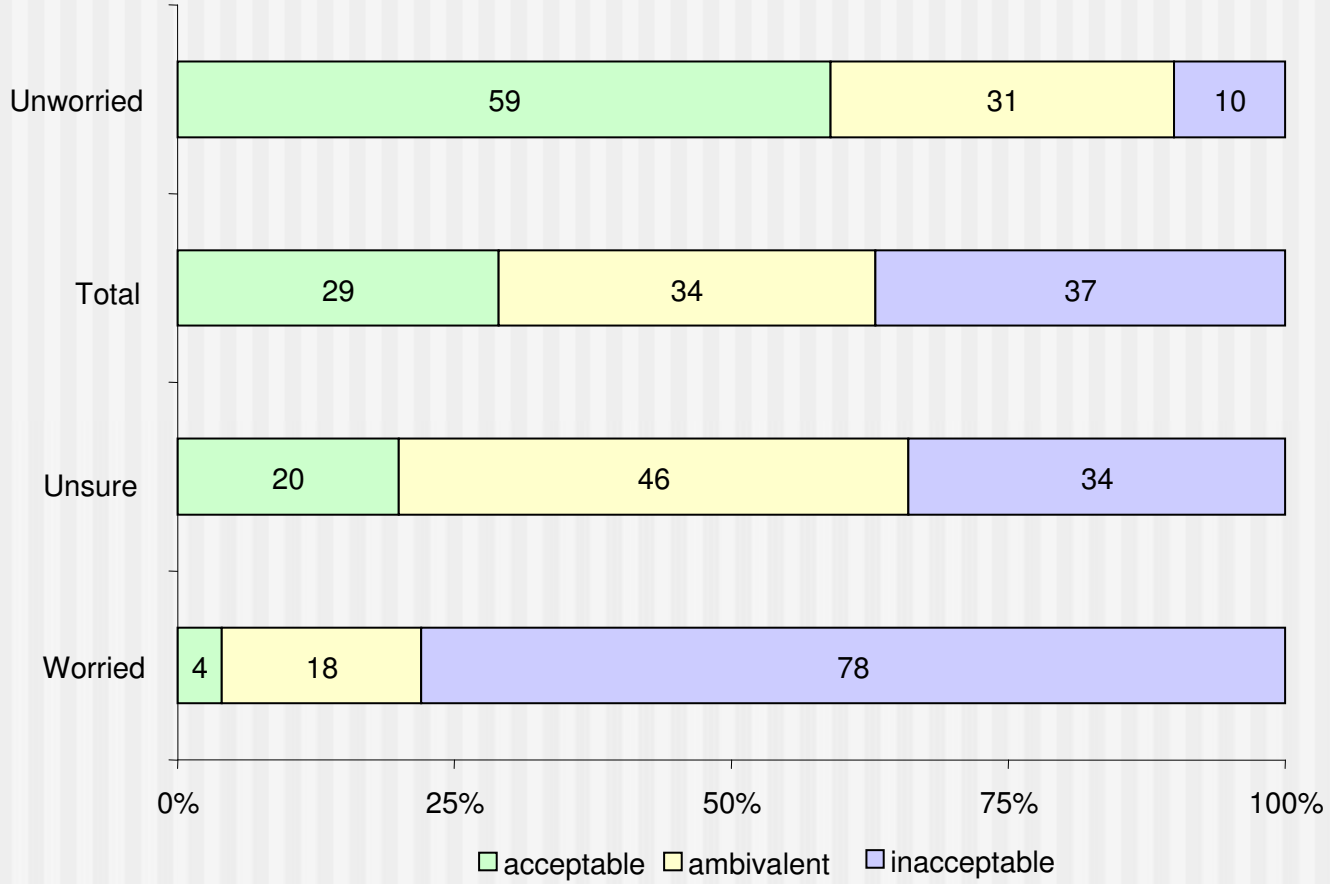
Results of the Mobile Telephone Survey 2005 VII

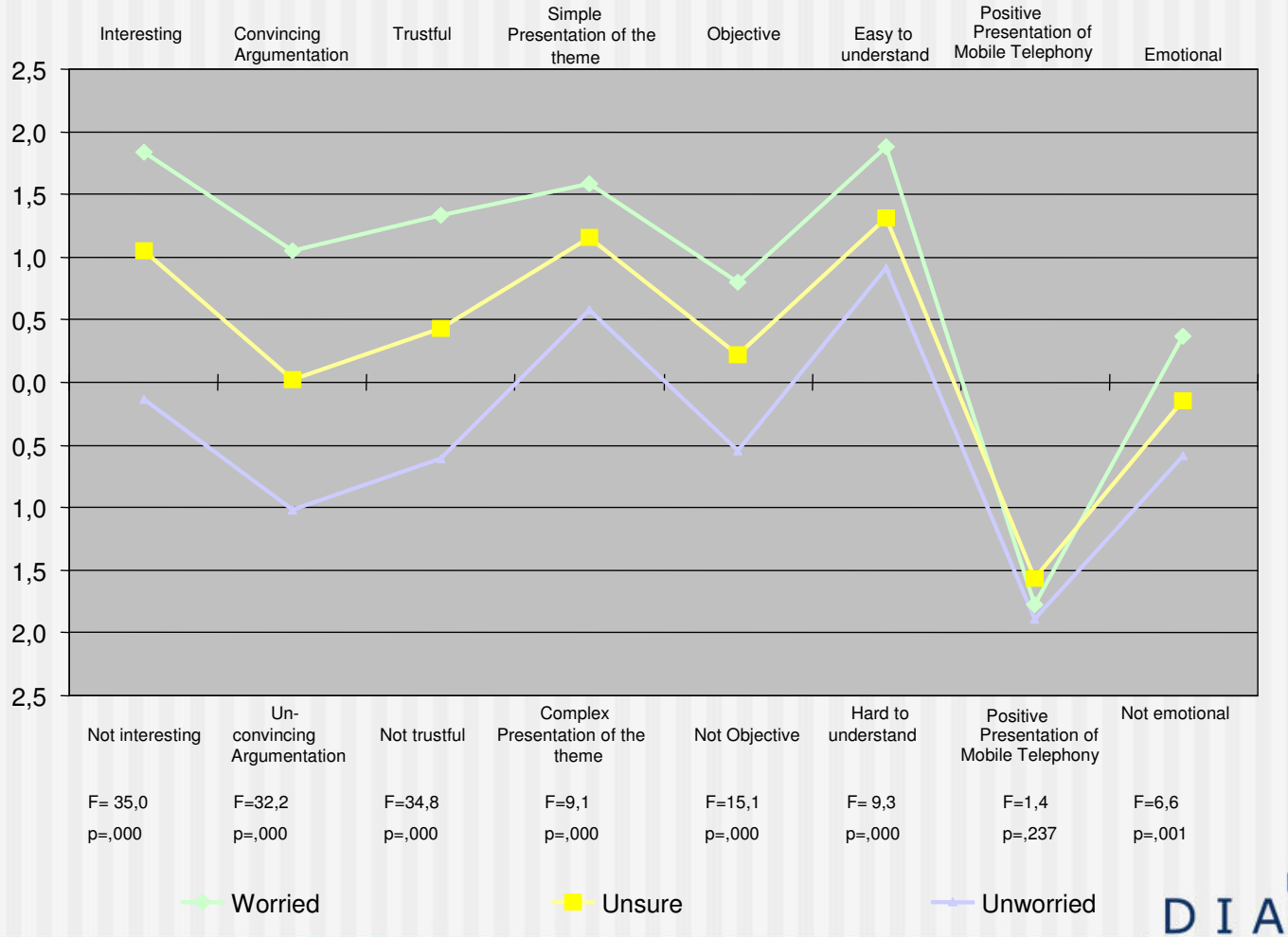
Figure: Acceptance of risks from base stations in Germany



Source: Mobile Telephony Survey 2005, n = 814, in %
acceptable = 4,5 ambivalent = 3 inacceptable = 1,2
Subgroups: Chi^2 = 265,303 p = .000 df = 4 C_{Korr} = .641

Results of the Mobile Telephony Survey 2005 VIII

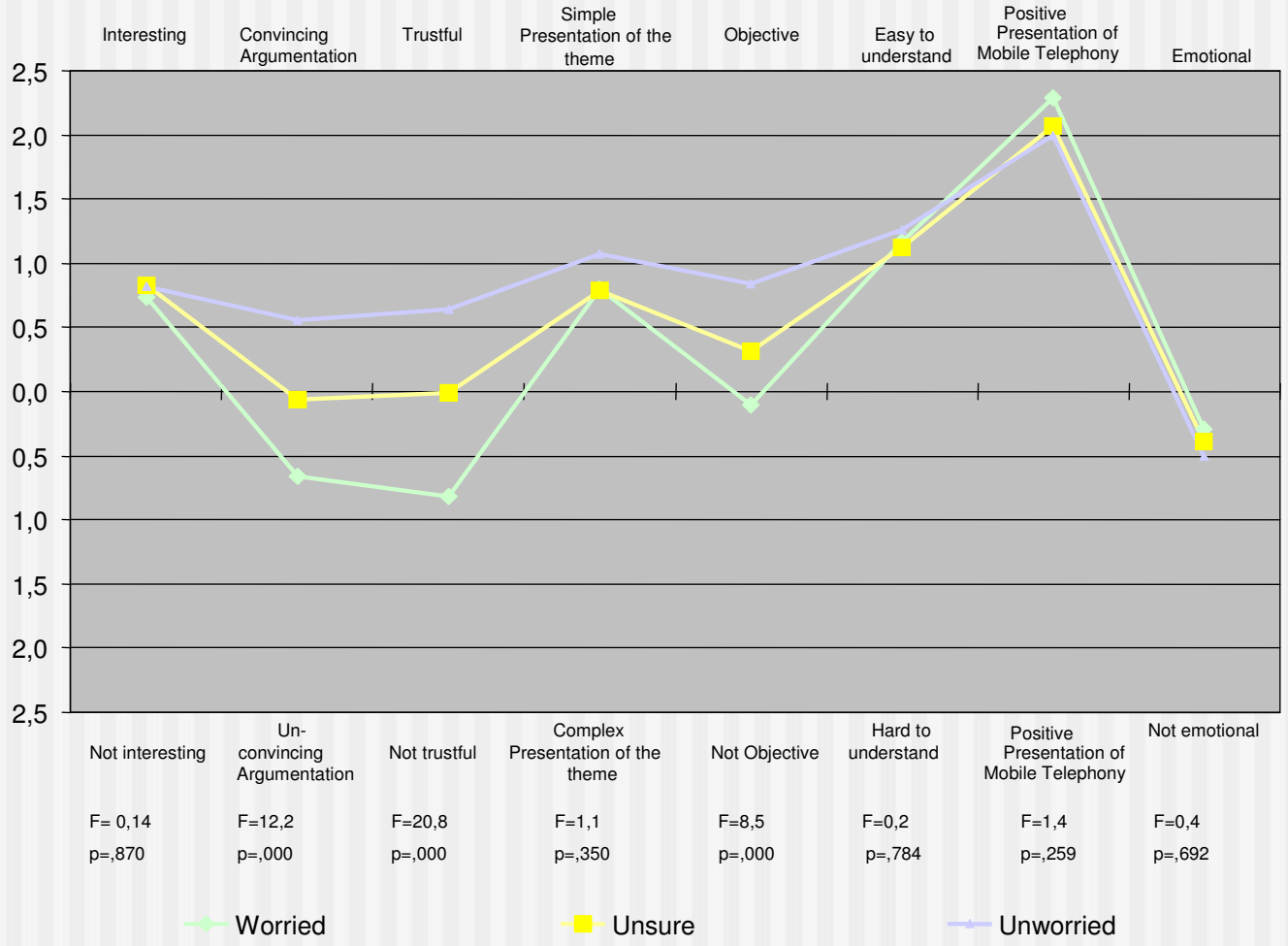
Figure: Text evaluation of Mobile Telephony Opponents by subgroups



Source: Mobile Telephony Survey 2005 , n = 347

Results of the Mobile Telephony Survey 2005 IX

Figure: Text Evaluation of Mobile Phone Industry by subgroups



Source: Mobile Telephony Survey 2005 , n = 347

Conclusions

- Risk communication in the field of Mobile Telephony demands differentiation. This is approved by both qualitative Focus Groups and quantitative Survey.
- To reach most of the people in Germany it is necessary to use different specific combinations of communication messages, channels and target groups.
- A **practical compendium** was created to improve risk communication in the field of Mobile Telephony. It encompasses guidelines for the different actors.

Pattern of information for the Unworried

Information for unworried people	
Target of communication	General Information (to sensitise and interest people to the theme EMF and the risks of Mobile Telephony)
Subgroup	Unworried
Receptiveness	low
Risk perception	low (mobile phone, base station)
Knowledge	average
Communication channels	Mass media (TV and radio, newspapers and magazines) Products (Labels and inserts)
Type of communication	Simple and vivid presentation (e.g. charts and graphics) no technical terms, therefore everyday speech („Grenzwert“ instead of „SAR-Wert“) catchy messages Usage of symbols (e.g. „Blauer Engel“)
Target groups	Users of mobiles, potential users

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Pattern of information for the Unsure

Information for unsure people	
Target of communication	Specific information (extension of general information about EMF and the risks of Mobile Telephony, reassurance, educational advertising)
Subgroup	Unsure
Receptiveness	average
Risk perception	low (mobiles), average (base stations)
Knowledge	low
Communication channels	Mass media (TV and radio, newspapers and magazines) Products (Labels and Inserts) School (projects , curriculum)
Type of communication	Simple and vivid presentation (e.g. charts and graphics) no technical terms, therefore everyday speech („Grenzwert“ statt „SAR-Wert“) practical advice for handling EMF-Risks (precaution- and protection- measures) Usage of symbols (e.g. „Blauer Engel“)
Target groups	Parents, people who do not use their mobiles very often

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Patterns of information and communication for the Worried

Information for and communication with worried groups	
Target of communication	Detailed information and communication (extension of general information about EMF and the risks of Mobile Telephony , presentation of science based knowledge, information about planning and building new base stations)
Subgroup	Worried
Receptiveness	high
Risk perception	high (mobiles, base stations)
Knowledge	high
Communication channels	Internet (Homepages of independent institutions) Brochures (neutral presentation of the theme) Information events (building of base stations) Discourse orientated measures (e.g. round tables)
Type of communication	Simple and vivid presentation (e.g. charts and graphics) partly usage of technical terms (e.g. SAR-Wert) practical advice handling EMF-Risks (precaution- and protection- measures) describe correlations (causal effects of EMF) name central studies (trustful results, resuming meta studies)
Target groups	Residents near base stations, sensible persons, action groups

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- Internet and Websites with reports to the surveys and studies

- http://www.emf-forschungsprogramm.de/forschung/risikokommunikation/risikokommunikation_abges/risiko_035.html

- www.bfs.de