

TECHNICAL EXCHANGE MEETING

GR&DC, JUNE 1982

Session 8: Psychology and Sensory Testing

Friday, 11th June

9.00 a.m. - 12.40 p.m.

Co-ordinator: R.P. Ferris

Consumer Studies (Dr. M.J. Weaver)

Consumer product test methods (Project NILE). Motivational/attitudinal researches in smoking and health, and social disapprobation (Projects LIBRA and ARIES).

Subjective/Psychological Methods (L. Higgins)

The social significance of smoking as it relates to arousal level modification. Product communication in the context of restrictive advertising.

Sensory Evaluation Methods (B.C. Harding)

Low delivery panel methods (Project BROMLEY). Development of an expert flavour-specific panel method. Subjective response to (a) pressure drop/ tip ventilation variation and (b) temperature and humidity variation.

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DEVELOPMENTS IN PSYCHOLOGY/SENSORY TESTING GROUP PROGRAMME

The strategic objective of this Group is to advance the fundamental understanding of the needs and behaviour of smokers and to develop and apply methods for the sensory assessment of tobacco smoke. Prime growth areas within the current programme are:

1. Subjective Evaluation Techniques, stimulated by the need to develop low delivery product assessment methods and methods to support innovative product developments (e.g. reduced sidestream).
2. Product Communication Research, developed initially from researches relating changes in subjective evaluation of the product to quantifiable aspects of brand imagery, now extending to researches dealing with means of optimising certain aspects of the communication mix in conditions of advertising restriction.
3. The Psychology/Smoking Behaviour Interface, where proposals for research linking the activities of Psychology and Sensory Testing and Smoking Behaviour groups were discussed at four levels:
 - (i) preliminary validation studies to consider artefactual effects of behavioural monitoring equipment on 'free' smoking;
 - (ii) subjective/objective correlation studies relating individual evaluative responses to product to measures of smoking behaviour;
 - (iii) specific correlation studies relating particular attribute responses (e.g. 'impact') to their physiological basis (e.g. broncho-constriction);
 - (iv) researches relating sidestream particle physics to subjective estimations of visibility.

Broad assent was received for both the principle and detail of these studies.

CONSUMER STUDIES

a) Consumer Product Test Methods

Project NILE, a large scale validation of DELTA, demonstrated the possibility of scaling up in-house panel methods to consumer product test applications. NILE results so far indicate acceptable reliability in the field and enhanced cost effectiveness in comparison with more traditional approaches.

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b) Motivational/Attitudinal Research

Recent researches in the perception of smoking as a social nuisance were exposed, with particular reference to strength of social disapprobation as a function of particular situations. Consensus between smoker and non-smoker groups is apparent in terms of those situations generating most and least annoyance. However, never-smokers appear to apply more extreme and less differentiating judgements. The intention to rationalise information gathered under projects LIBRA and ARIES was described, with the following aims:

- (i) to develop a short-term monitoring questionnaire for tracking the development of smoking and health/social disapprobation attitudes in the marketplace;
- (ii) to develop a model for market segmentation based on an individual's motivation and attitudes predictively related to quitting and switching behaviour.

Particular support was registered for these latter intentions and it was generally agreed that, for the time being, no new data should be collected.

SUBJECTIVE/PSYCHOLOGICAL METHODS

a) Social Significance of Smoking and Arousal Modification

A recently initiated contract was described, the purpose of which is to develop an explanatory model of the relationship between the gestural use of the cigarette in social coping situations and the consequences of this for central physiological mechanisms of arousal level maintenance. Prime elements of the model were described as the observed relationships between certain smoking gestures (e.g. puff taking) and averting of eye gaze, which in turn are related through the latter to central nervous system activity level.

The basic hypothesis that smoking allows more refined control of social coping and central arousal was thought to be of particular relevance to 'benefits' research.

b) Product Communication Researches

The prime objective of work in this area is to improve the Tobacco Operating Group's response to the threat of growing advertising restrictions. Priorities in this area are largely derived from the 1979 Jesteberg Guidelines on the future of marketing under conditions of limited communication media.

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Research proposals for pack design, pack within point of sale and poster prominence or 'stand-out' were outlined, all being based on measures of stimulus duration time required for recognition of salient features and on recordings of eye gaze tracking behaviours across complex visual fields. It was accepted that the value of these researches lies in pack pre-testing and establishing field force 'selling-in' guidelines. Discussions also centred on the acknowledged difficulties of familiarity effects and the lack of clear association between awareness, purchase intention and actual 'looking' behaviour in this area. An indication was given that pack research could be undertaken cross-culturally as one way of dealing with the familiarity effect.

Outline proposals were also presented for researching the effectiveness of different combinations of media in communicating novel/innovative product features and for applying the NILE method to brand image measurement.

Finally, recent results of Project FUTURE were exposed. FUTURE is a qualitative study of the Finnish (total ban) market concerned with social/cultural bases of product information flow. It was indicated that it is difficult with this type of research to isolate truly post ban phenomena since most pre/post ban effects at this level are apparently of degree rather than type. Nevertheless, three of the main observations were discussed:

- (i) evidence of an increase in demand for technically innovative products;
- (ii) a developing reaction against pack homogeneity;
- (iii) perceived importance of access at the point-of-sale for visual/tactile examination of packs.

SENSORY EVALUATION METHODS

a) Project BROMLEY

Progress was reported on development of a new exemplar based approach to low delivery evaluation. The factor structure of consumer vocabularies was shown to be similar to DELTA structure with the notable addition of a 'visual-tactile' factor. Predictive modelling of acceptability using measures of 'baseline expectance' and 'tolerance bandwidths' may be possible using consumer samples.

b) Flavour Panel Development

Two screening exercises to refine a large population in terms of flavour sensitivities (specific anosmias) and flavour recognition were described. Multidimensional scaling, cluster analysis and factor analysis treatments of subjective evaluations of a wide range of flavours yielded essentially

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similar results. The structure of the flavour 'perceptual space' is very similar to professional flavourist systems, including floral, musk, balsamic/vanillic, fruity, minty, smoky and spicy categories.

The future programme of method development was described. This will include leaf type familiarisation (lit and unlit) and specific flavour/leaf combinations. The purpose and progress of this work received full endorsement.

c) Pressure Drop/Tip Ventilation Variability

The effect of differences in ventilation and pressure drop on the subjective evaluation of a single brand of cigarette has been studied using cigarettes drawn from a normal production run.

An increase in either variable is associated with significantly increased perception of amount of draw effort; decreased impact, mouthfull, mouth/throat/nose feel, taste; and no association with aroma and acceptability.

These results and the methodological approach were well received and the possibility of further collaborative researches discussed, particularly the possibility of repeat studies in markets with differing manufacturing control standards.

d) Temperature/Humidity Variability

It was recorded that this project, using a similar method to that used in the ventilation study, is now completed and data analysis is to follow.

There was general agreement that further studies in the area of product variability and subjective evaluation should be undertaken. Firmness and hot collapse were nominated as future topics for future investigation.

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