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**Participation at the Seventh European Conference
on Sensory and Consumer Research, Eurosense
(A Sense of Time) 2016, 11 - 14 September 2016,
Dijon, France and research visits to
AgroTechParis and INRA**



EUROSENSE 2016

A Sense of Time

SEVENTH EUROPEAN CONFERENCE ON
SENSORY AND CONSUMER RESEARCH
DIJON, FRANCE 11-14 SEPTEMBER 2016

**FINAL REPORT to
AUSTRALIAN GRAPE AND WINE AUTHORITY**

Project Number: AGT 1531 (PPA001702)

Principal Investigator: **Dr Lukas Danner**

Research Organisation: **The University of Adelaide**

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Abstract

The award of this travel grant provided University of Adelaide postdoctoral research fellow, Lukas Danner, the opportunity to attend and present at Seventh European Conference on Sensory and Consumer Research, Eurosense (A Sense of Time) 2016, 11 - 14 September 2016, Dijon, France, and visit leading research laboratories and meet researchers from INRA (French National Institute for Agricultural Research) and AgroTechParis. The focus of the Eurosense conference is sensory and consumer research, including sensory fundamentals, food choice and consumer behaviour, big data analysis from sensory evaluations, culinary arts and emotion research relevant to food products and wine. Lukas Danner presented research findings from the Wine Australia funded research project (UA1203) at the conference in form of an oral presentation and a poster to the international audience. Additional to excellent networking and professional development opportunities, including numerous workshops, the conference provided the opportunity for Lukas Danner to meet international collaborators and work on joint publications and research projects. Research visits to INRA and AgroTechParis provided interesting insights in cutting edge research laboratories as well as strengthen international collaborations between the research institutes and the University of Adelaide.

Executive summary

Eurosense is a bi-annual symposium held at different locations gathering over 600 experts in sensory and consumer research from academia and industry. 2016 Eurosense was held in Dijon, France and was organised by INRA (French National Institute for Agronomical Research), SFAS (French Society of Sensory Analysis) and E3S (European Sensory Science Society). Eurosense is a multi-disciplinary conference, with a focus on sensory and consumer research covering aspects ranging from sensory fundamentals, food choice and consumer behaviour, over big data analysis from sensory evaluations to culinary arts and science. Newest research findings and latest advances in sensory and consumer research methodology were showcased in 12 workshops, 56 oral and over 300 poster presentations.

The provided travel grant enabled Lukas Danner:

1. **Present the latest research findings from the Wine Australia funded research project (UA1203) at the Seventh European Conference on Sensory and Consumer Research (Eurosense 2016) in Dijon**, to an international audience in form of an oral and a poster presentation. The oral presentation was entitled '*Relationships between wine consumers' fine wine behaviour and their moods, product-evoked emotions, liking and willingness to pay for Australian Shiraz wine: A segmentation study*' and was scheduled in the session on '*Wine*' additionally the poster with the title '*The effect of consumers' moods on product-evoked emotions and hedonic evaluation - the example of Australian Shiraz wines*' was presented during a dedicated poster session (please see Appendix 5 for abstracts and a print of the poster).
2. **Networking with leading sensory and consumer researchers.** Both presentations initiated interesting discussions with conference delegates, which not only validated project scope and methodology, but provided new ideas for future experiments, publications and potential joint project. Furthermore, the participation allowed Lukas to meet international collaborators including, Dr Herb Meiselman, Dr Klaus Duerrschmid and Dr Anne Hasted, to work on joint publications and discuss the next steps of ongoing and future project.
3. **Research visit to INRA and meeting with Dr Gaëlle le Goff from AgroTechParis**, provided interesting insights in cutting edge research laboratories as well as strengthen international collaborations between the research institutes and the University of Adelaide. Additionally to the stated aims Lukas Danner visited Dr Yve Le Fur from AgroSup Dijon, INRA-Université de Bourgogne to discuss possible collaborations and

student exchanges between AgroSup Dijon, INRA, Université de Bourgogne and the University of Adelaide.

- 4. Gaining new knowledge and dissemination of new knowledge and information** gained from participating at Eurosense and research visits at the research group meeting a week after return. The Eurosense conference as well as the research visits provided Lukas Danner with an excellent opportunity to learn more about the latest advances and trends in sensory and consumer science methodology in for of presentations, workshops and scientific discussions. The gained knowledge as well as contacts for new possible collaboration were disseminated in the monthly research group meeting at the University of Adelaide after return.

In summary, the opportunity to attend the conference and meet with international researchers was of considerable value, not only for Lukas Danner (in terms of both professional development, networking and ongoing research efforts) but also beneficial for Australian wine sector by promoting the latest research findings and extending the research network of Wine Australia and The University of Adelaide.

Background

Seventh European Conference on Sensory and Consumer Research, Eurosense (A Sense of Time) 2016, 11 - 14 September 2016, Dijon, France

Eurosense is a bi-annual symposium held at different locations gathering approximately 600 experts in sensory and consumer research from academia and industry. 2016 Eurosense was held in Dijon, France and was organised by INRA (French Institute for Agronomical Research), SFAS (French Society of Sensory Analysis) and E3S (European Sensory Science Society). Eurosense is a multi-disciplinary conference, the topics covered included:

- Sensory Fundamentals: physiology, psychophysics, psychology
- Mechanisms of Food Intake
- Food Choice and Consumer Behaviour
- Advances in Sensory and Consumer Tools and Methods
- Frontiers and Innovations in Sensometrics
- Big Data from Sensory Evaluation, Internet Opportunities
- Sensory-Driven Product Design and Optimization
- Modelling Sensory Responses by Instrumental Data

- Sensory Drivers for Health and Wellbeing
- Age-related Sensory Perception and Food Behaviour
- Culinary Arts and Science
- New Challenges from Sensory Science and Methods with Non-food Products
- Cross Cultural Sensory and Consumer Research
- Challenges in Emerging Markets

Newest research findings and latest advances in sensory and consumer research were presented in 12 workshops, 56 oral and over 300 poster presentations. Because of the special location of this year's conference, Dijon (capital of the Côte-d'Or département and of the Bourgogne-Franche-Comté region) a special focus of the conference was on wine and food and wine pairing, with distinct presentation sessions for wine (where Lukas presented his work) and a food and wine pairing session. The presented work was well received by wine experts as well as by participants more interested in the methodical approach leading to interesting discussions and new connections.

The AGWA travel grant provided part of the financial support required to meet the travel, registration and accommodation costs associated with attending the conference and the associated research visits and meetings.

Project aims and performance targets

The overarching aims of this project were the dissemination of ongoing research at the Eurosense 2016 conference, promote the Australian wine industry and wine industry stakeholders as well as extend existing and form new international research connections.

The detailed aims were:

1. Present the latest research findings from the Wine Australia funded research project (UA1203) at the Seventh European Conference on Sensory and Consumer Research (Eurosense 2016), to an international audience.
2. Networking with leading sensory and consumer researchers.
3. Research visit to INRA and meeting with Dr Gaëlle le Goff from AgroTechParis.
4. Gaining new knowledge and dissemination of new knowledge to colleagues at the University of Adelaide

Conference and travel outcomes

The participation of Lukas Danner at the Eurosense 2016 conference and associated meetings/research visits were very successful and all project aims and performance targets were reached:

1. **Present the latest research findings from the Wine Australia funded research project (UA1203) at the Seventh European Conference on Sensory and Consumer Research (Eurosense 2016)**, to an international audience in for of an oral and a poster presentation. The oral presentation was titled '*Relationships between wine consumers' fine wine behaviour and their moods, product-evoked emotions, liking and willingness to pay for Australian Shiraz wine: A segmentation study*' and was scheduled in the session on 'Wine' additionally the poster with the title '*The effect of consumers' moods on product-evoked emotions and hedonic evaluation - the example of Australian Shiraz wines*' was presented during a dedicated poster session (please see Appendix 5 for abstracts and a printout of the poster). The presentations were well received by the scientific as well as industry audience resulting in interesting discussion, new ideas for ongoing and new research as well as possible future collaborations.
2. **Networking with leading sensory and consumer researchers.** Both presentations initiated interesting discussions with conference delegates, which not only validated project scope and applied methodology, but provided new ideas for future studies, publications and potential joint projects. Furthermore the participation allowed Lukas to meet international collaborators including, Dr Herb Meiselman, Dr Klaus Duerschmid, Dr. Barbara Sigmund and Dr Anne Hasted, to work on joint publications and discuss the next steps of ongoing and future project. Two book chapters for the book entitled 'Advances in Methodological Approaches in Consumer Research' which were finalized over the course of a meeting with Dr Klaus Duerschmid associated with the travel are currently under review by the editors.
3. **Research visit to INRA and meeting with Dr Gaëlle le Goff from AgroTechParis**, provided interesting insights in cutting edge research laboratories as well as strengthen international collaborations between the research institutes and the University of Adelaide.
4. **Gaining new knowledge and dissemination of new knowledge and information.** The Eurosense conference as well as the research visits provided Lukas Danner with an excellent opportunity to learn more about the latest advances and trends in sensory and consumer science in for of presentations, workshops and discussion. The major

advantage of attending this conference was to learn about methodologies as they are developed and which we would not heard about for another couple of years from peer reviewed publication. The gained knowledge as well as contacts for new possible collaboration were disseminated in the monthly research group meeting after return.

Additionally, a manuscript of the presented work is currently under preparation and will be submitted to the special conference issue of Food Quality and Preference.

Recommendations

The highly regarded Eurosense conference showcases cutting edge findings and methodologies in the field of sensory and consumer research. The early adoption of improved and new methodologies can be particularly relevant to the Australian wine sector and its researchers in dealing with typical issues such as: data collection, analyses and use of consumer data; linking wine quality, wine sensory and chemistry; understanding consumer perception of wine and wine quality. Improved methodologies and practices will not only potentially benefit Australian wine businesses nationally but also to remain competitive internationally.

Appendices

Appendix 1: Communication

The gained knowledge from the conference and the research visits/meetings as well as contacts for new possible collaboration were disseminated in the monthly research group meeting at the University of Adelaide after return.

A manuscripts based on the research findings presented at Eurosense 2016 will be prepared for submission to a special issue of *Food Quality and Preference*.

Two book chapters for the book entitled '*Advances in Methodological Approaches in Consumer Research*' were finalized over the course of a meeting with Dr Klaus Duerrschmid associated with the travel and are currently under review by the editors.

Appendix 2: Intellectual Property

Not applicable - This project has no intellectual property attached to it.

Appendix 3: References

Not applicable – refer to conference abstracts provided as Appendix 5.

Appendix 4: Staff

Principal Investigator: Dr Lukas Danner

Principal Supervisor: Associate Professor Susan Bastian

Appendix 5: Abstracts

Abstract oral presentation:

Relationships between wine consumers' fine wine behaviour and their moods, product evoked emotions, liking and willingness to pay for Australian Shiraz wine: A segmentation study.

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The aim of this study was to elucidate the relationship between consumers' fine wine behaviour and their moods, wine-evoked emotions, liking and willingness to pay. Three trials involving regular red wine consumers (n = 114, 115, and 120) examined 12 Australian commercial Shiraz wines in total, with each trial set comprising one of each of high, medium-high, medium-low and low quality wines. Wine consumers evaluated liking and product-evoked emotions (measured with a 19-item wine-specific emotion lexicon) by blind tasting the same set of wines in three different contexts: a sensory laboratory, a restaurant and at home. Additionally, participants stated their mood before tasting the wines using the Brief Mood Introspection Scale. The Fine Wine Instrument, an 18-item scale measuring consumer wine related behaviour and knowledge (Johnson & Bastian, 2015), was used to categorise consumers into "Wine Enthusiasts", "Aspirants" and "No Frills" segments.

Results showed that "Wine Enthusiasts", independent of context, were in a more positive mood (more loving, energetic, happier, and calmer) compared to the two other segments in anticipation of tasting wine. The opposite was true for negative moods such as sad and anxious. Similar results were found for wine-evoked emotions. "Wine Enthusiasts" felt more intense positive emotions (e.g. contented, happy and warm hearted) and less intense negative emotions (e.g. unfulfilled and embarrassed). Furthermore, significant differences in willingness to pay and liking were observed between the segments. "Wine Enthusiasts" were willing to pay more for wine and liked the tasted wines more, independent of wine quality, however this effect was more dominant for high quality wines. Results were consistent across

the three trials, showing that “Wine Enthusiasts” were more emotional about wine compared to less involved segments. This indicates that consumer segmentation incorporated with emotion measurement is important for future application of emotion research in targeted marketing strategies.

References:

Johnson, T. E., & Bastian, S. E. P. (2015). A fine wine instrument – an alternative for segmenting the Australian wine market. *International Journal of Wine Business Research*, 27(3), 182–202. <http://doi.org/10.1108/IJWBR-04-2014-0020>

Abstract and printout poster presentation:

The effect of consumers’ moods on product-evoked emotions and hedonic evaluation - the example of Australian Shiraz wines

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The number of studies investigating emotions within consumer research has grown rapidly during the past years but few studies have considered the relationship between participants’ moods, product-evoked emotions and liking. This study investigated those relationships with 350 consumers in blind tastings under three contexts (sensory laboratory, restaurant, home). Participants rated their mood using the Brief Mood Introspection Scale (BMIS) before tasting four samples of Australian Shiraz wine. The questionnaire included liking and product-evoked emotions on a 19-item wine-specific emotion lexicon.

Several significant correlations between wine-evoked emotions and moods were found ranging from $r = 0.18$ to 0.41 . Emotional terms with positive valence, e.g. contented, happy and optimistic, were positively correlated with moods of positive valence, e.g. happy, loving and energetic. Similar results were found for the correlations between emotions and moods both with negative valence. The correlations between moods and liking, although significant for some mood terms, were weaker with correlations ranging between $r = -0.09$ and 0.12 . In

comparison to product evoked emotions, mean liking ratings were very stable over a wide range of moods in all contexts. Increases were noticed if participants felt extremely loving or happy and slight decreases were found if participants did not feel loving or happy at all, however these effects were very small. This possibly indicates that consumers had a rather stable concept about what they liked and disliked, and that their daily mood had only a very limited influence on the results of formal hedonic evaluations. On the other hand, the high influence of mood on consumers' product-evoked emotions may indicate their emotions are dependent on their daily mood state. The relationship between mood and product-evoked emotions suggests the necessity for further research into this possibly important phenomenon and underlines the importance of with-in-subject measurements when investigating product-evoked emotions.

The effect of consumers' moods on product-evoked emotions and hedonic evaluation – on the example of Australian Shiraz wines



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Background and Aims

The number of studies investigating food-evoked emotions within consumer research has grown rapidly during the past years, but few studies have considered the relationship between participants' moods, consumption context, product-evoked emotions and liking.

This study aimed to investigate those relationships using three contexts (sensory laboratory, restaurant, home) under blind tasting conditions using Australian Shiraz wines of different quality levels as the test product.

Materials and Methods

Trial Design:

Three independent trials (total n=347 regular wine consumers and 12 Shiraz wines) were conducted. In each trial every consumer evaluated:

- 4 different Australian Shiraz wines, representing the 4 quality levels of the Australian wine show system (i.e. no medal, bronze, silver and gold medal),
- under 3 different consumption contexts:
 - sensory laboratory,
 - restaurant
 - and at home,

Tastings in the different contexts were at least one week apart and consumers were not aware that the same wines were presented in each setting.

Consumer Psychographic Measures:

Before tasting/upon arrival:

- consumers stating their moods on the Brief Mood Introspection Scale¹

After tasting the wines consumers rated:

- liking,
- product-evoked emotions, using the Australian Wine Evoked Emotion Lexicon²
- willingness to pay

Table 1: Emotion Terms used in the Australian Wine Evoked Emotion Lexicon²

Positive (11)	'adventurous', 'calm', 'contented', 'enthusiastic', 'happy', 'nostalgic', 'optimistic', 'passionate', 'relaxed', 'surprised' and 'warm hearted'
Negative (8)	'embarrassed', 'envious', 'irritated', 'lonely', 'panicky', 'sad', 'tense' and 'unfulfilled'

Results

Influence of consumption context on consumers' moods

The results of the ANOVA showed that in anticipation of the wine tasting, participants in the restaurant and at home were in a more positive mood (*happy* and *loving*) compared to the laboratory setting. The opposite was true for *anxious*, showing that consumers felt more anxious in the laboratory compared to home, with the restaurant setting ranging between the two.

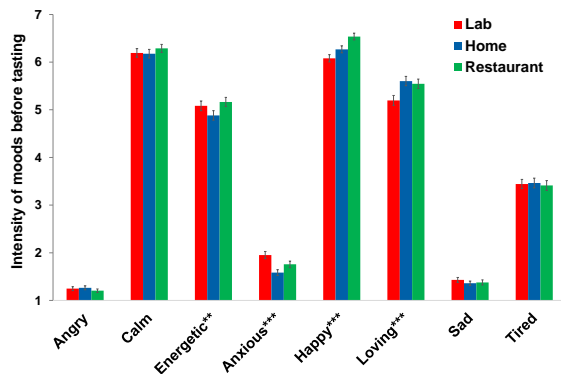


Figure 1: Consumers' moods (scale ranging from 1 – "not at all" to 9 – "extremely") in the three different context settings (home, lab and restaurant). Error bars indicate SE. Significant differences are indicated by * p < 0.05, ** p < 0.01 and *** p < 0.001.

Acknowledgements: This project has been funded by Wine Australia with matching funds from the Australian government. Additionally, we would like to thank the supporting wineries for providing the wines for this project and the assistance of Gersende Carquex and Laura Fassier.

Correlations between consumers' moods, emotions and liking

Several significant correlations between wine-evoked emotions and moods were found ranging from r = - 0.18 to 0.41.

Table 2: Correlations between Moods before tasting, liking and wine-evoked emotions.

	Angry	Anxious	Calm	Energetic	Happy	Loving	Sad	Tired
Liking	.001	.003	.098**	.110**	.121**	.105**	-.085**	-.055
Adventurous	.032	.080**	.133**	.356***	.248**	.272**	-.032	-.039
Calm	-.029	-.026	.348**	.234**	.282**	.256**	-.079*	.022
Contented	-.024	-.001	.242**	.246**	.344**	.289**	-.073*	.044
Embarrassed	.169**	.269**	-.031	.107**	.025	.088*	.203**	.056
Enthusiastic	.022	.056	.195**	.383**	.325**	.316**	-.046	-.020
Envious	.178**	.203**	-.001	.077	-.009	.042	.161**	.093**
Happy	-.048	-.020	.244**	.296**	.405**	.339**	-.110**	.001
Irritated	.259**	.245**	-.116**	-.014	-.068*	-.013	.272**	.140**
Lonely	.263**	.294**	-.125**	.027	-.082*	-.057	.252**	.182**
Nostalgic	.115	.138	.099	.178**	.170**	.187**	.089**	.135**
Optimistic	.019	.082**	.201**	.348**	.316**	.318**	-.043	-.006
Panicky	.248**	.289**	-.120**	.047	.001	.043	.283**	.176**
Passionate	.047	.051	.163**	.344**	.286**	.404**	.001	.024
Relaxed	-.045	-.021	.306**	.246**	.311**	.269**	-.098**	-.003
Sad	.341**	.291**	-.128**	-.001	-.081**	.010	.410**	.215**
Surprised	.082**	.141**	.108**	.244**	.194**	.200**	.055	.039
Tense	.295**	.307**	-.176**	.023	-.056	.005	.274**	.199**
Unfulfilled	.140**	.178**	-.038	-.002	-.024	-.005	.166**	.117**
Warm hearted	.001	.012	.242**	.301**	.355**	.377**	-.064*	.017

Pearson correlation coefficients are reported. Significant correlations at p < 0.05 are marked with *, at p < 0.01 with ** and at p < .001 with ***.

Emotional terms with positive valence, e.g. *contented*, *happy* and *optimistic*, were positively correlated with moods of positive valence, e.g. *happy*, *loving* and *energetic*. Similar results were found for the correlations between emotions and moods both with negative valence. The correlations between moods and liking, although significant for some mood terms, were weaker with correlations ranging between r = -0.09 and 0.12.

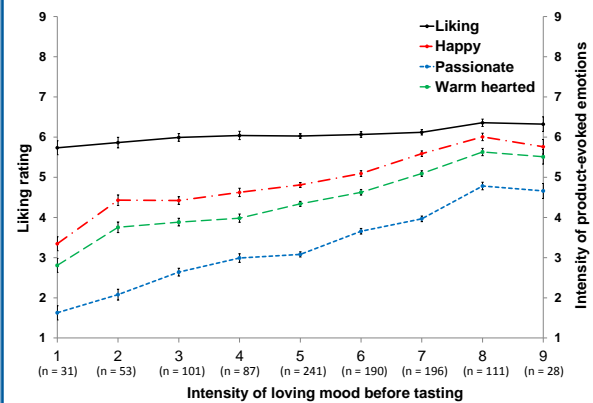


Figure 3: Relationship between loving mood, product-evoked happy, passionate, warm hearted emotions and liking across all contexts, wines and participants. Intensity of moods and product-evoked emotions were measured on a 9-point scale, ranging from 1 = not at all to 9 = extremely. Liking ratings were measured on a 9-point hedonic-scale, ranging 1 = dislike extremely to 9 = like extremely. Error bars indicate standard errors.

Conclusions

- Consumption context had a significant influence on consumers' moods in anticipation of the wine tastings.
- Weak to moderate correlations between consumers moods and stated wine-evoked emotions were observed, indicating that consumers' moods influence subsequent product-evoked emotion ratings.
- Liking ratings were less influenced by consumers' moods compared to emotions.
- The results highlight the importance of the use of within subject designs when investigating product-evoked emotions.

References:

- Mayer, J. D., & Gaschke, Y. N. (1988). The experience and meta-experience of mood. *Journal of Personality and Social Psychology*, 55(1), 102-111.
- Danner, L., Ristic, R., Johnson, T. E., Meiselman, H. L., Hoek, A. C., Jeffery, D. W., & Bastian, S.E.P. (2016). Context and wine quality effects on consumers' mood, emotions, liking and willingness to pay for Australian Shiraz wines. *Food Research International*. <http://doi.org/10.1016/j.foodres.2016.08.006>

Appendix 6: Budget reconciliation

Provided online via CIMS