
The nature of things

**An Interdisciplinary
Investigation Into The
Experiences and Impacts of
Drought For Three Generations
Of Australian Women**

Jane Louise Rich

B.Dev Stud (Hons)

A thesis submitted for the degree of Doctor of Philosophy
October 2013

Statement of Originality

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library**, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968.

**Unless an Embargo has been approved for a determined period.

02/July/2014

Jane Rich

Date

Acknowledgements

Dear God,

We rejoice and give thanks for earthworms,

bees, ladybirds and broody hens;

for humans tending their gardens, talking to animals,

cleaning their homes and singing to themselves;

for rising of the sap, the fragrance of growth,

the invention of the wheelbarrow and the existence of the teapot,

we give thanks. We celebrate and give thanks.

Amen (Leunig 2012).

To the women of Australia who take part in the ALSWH, thank you. I believe what you do for women is much larger than you may realise, a three-yearly survey goes a long way! The lessons, stories, experiences & strengths that I have learnt from reading your comments amazes me again & again. The information you share with the research community is invaluable & it is our duty to do our utmost to respect it.

To my supervisors, Deborah Loxton and Sarah Wright, thank you. I am grateful for your time, energy, perspective, enthusiasm & support. The list of thanks here could go on & on. Deb, thank you for introducing me to the world of big data! Your belief in my abilities & your gentle push to challenge myself will always be appreciated. Sarah, my very first university lecturer, you have inspired me since I was 18 & you continue to do so, thank you for everything. What an honour to say you are my friends! Thank you.

To Julie Byles & the Research Centre for Gender, Health and Ageing, what a family I have in you. Thank you for all of your professional and personal support. A special thanks to Jenny Helman for proof-reading my thesis.

To Julia Cretchley, thank you for your passion & guidance with Leximancer. It has been a great learning curve & honestly one that would have been almost impossible without you. You shared your enthusiasm & knowledge, I am so grateful.

To Alexis Hure, thank you for reviewing my Leximancer analyses. You helped me articulate what was sometimes a very complicated process to explain. The feedback you provided from an ‘outsiders’ perspective was truly appreciated.

To Sheree Harris, my fabulous statistician friend, thank you for your patient explanation of variables, tables & figures. You have taught me a lot! Plus you are my exercise buddy, which kept me sane!

To the New South Wales Rural Assistance Authority, thank you for your financial support & belief in my research & its contribution to the sustainability of rural communities.

To my fellow PhD’ers, Cath, Mel & Amy. What a boring few years it would have been without you. We have had some ups & downs but the downs would have been much tougher without you. Cath (& Paul), my career gurus, thank you for sharing your knowledge with me, I have learnt so much from you. Mel, your tenacity has been truly inspiring & without your formatting advice where would I be? Amy, our ‘quiet’ chats in the pod & laughter are already missed.

To my Mum, words cannot describe the admiration & gratitude I have for you. No wonder I write about women, you are an amazing woman. Aaron my bro, thank you for being interested & making good coffee!

Michael my love, you are the most grounded person I know. Thank you for providing stability beneath my crazy, vivacious self! You always know how to bring me back to earth. Sometimes we all need a bit of peace & with you I find it. Thank you. Here is to our time post PhD!

Completing a PhD is a luxury, to spend time fully entrenched in a passion, for years, is an honour. I thank every conference, researcher, student, article, book, song, poem, prayer, bird & plant that has helped me focus & find love in completing this project.

x Again, for Arne x

I think we are bound to, and by, nature. We may want to deny this connection and try to believe we control the external world, but every time there's a snowstorm or drought, we know our fate is tied to the world around us

(Hoffman 2001)

Table of Contents

Chapter 1 3

1.1. Australia's Geography: Setting The Scene	4
1.2. Theoretical Approaches To Understanding Women's Wellbeing In Drought	8
1.3. Research Question And Project Aims	15
1.4. Thesis Outline.....	16

Chapter 2 19

2.1. Introduction	19
2.2. Literature Search Strategies.....	20
2.3. Climate Change And Its Health Effects	20
2.4. Adaptation To Climate Change - Resilience.....	25
2.5. Droughts In Australia And Effects On Health	27
2.6. Women And Rural Life In Australia.....	32
2.6.1.Rural Women And Resilience.....	36
2.7. Women And Drought In Australia	38
2.7.1.Women, Ageing And Drought	45
2.8. Summary of research gaps	49

Chapter 3 52

3.1. Introduction.....	52
3.2. The Australian Longitudinal Study On Women's Health	54
3.3. The Qualitative Dataset.....	56
3.4. Drawing The Sample	58
3.5. Inclusion Criteria.....	60
3.6. Description Of Quantitative Measures.....	62
3.7. Sample Characteristics	64
3.8. Data Analyses.....	76
3.9. Study One: Thematic Analyses.....	76
3.10. Study Two: Longitudinal Analyses	79
3.11. Study Three: Narrative Analyses	83
3.11.1.Narrative Analysis Procedure And Method.....	86
3.11.2.Data Analysis	89
3.12. Quality And Rigour In Three Qualitative Studies	94

Chapter 4 99

4.1. Thematic Analyses Introduction	99
---	----

4.2.	A Thematic Analysis Of The Younger Women's Free-text	
	Comments.....	100
	Theme One: Family Life.....	102
	Theme Two: Financial Stress.....	103
	Theme Three: Reflections on Emotional Wellbeing.....	104
	Conclusion.....	104
4.3.	Thematic Analysis Of The Mid-aged Women's Free-text	
	Comments.....	105
	Theme One: Development of Identity and Self-worth.....	108
	Theme Two: Biological Ageing and Drought.....	110
	Theme Three: Support During Drought.....	111
	Theme Four: Retirement and Plans for the Future.....	113
	Conclusion.....	115
4.4.	Thematic Analysis Of The Older-aged Women's Free-text	
	Comments.....	116
	Theme One: Work and Standard of Living.....	119
	Theme Two: Physical Activity and Resilience in Adversity.....	121
	Theme Three: Connection to Place.....	123
	Theme Four: Service Access.....	125
	Conclusion.....	127
4.5.	Generational Comparison Of Three Thematic Analyses	127
4.6.	Conclusion: Thematic Analyses.....	132

Chapter 5..... 135

5.1.	Longitudinal Analyses Introduction.....	135
5.2.	A Longitudinal Analysis of Young Women's Free-text	
	Comments.....	137

5.3.	Young Survey One: 1996.....	140
	Concept One: Environmental.....	140
	Concept Two: Women	140
	Concept Three: Affected	141
	Concept Four: Health	141
	Concept Five: Things	141
5.4.	Young Survey Two: 2000	142
	Concept One: Time	142
	Concept Two: Week.....	142
	Concept Three: Answers	142
	Concept Four: Questions.....	143
	Concept Five: Environmental.....	143
5.5.	Young Survey Three: 2003	143
	Concept One: Due	143
	Concept Two: Pregnant.....	144
	Concept Three: Drought.....	144
	Concept Four: Wife	144
	Concept Five: Months	144
5.6.	Young Survey Four: 2006.....	145
	Concept One: Job	145
	Concept Two: Husband.....	145
	Concept Three: Home	146
	Concept Four: Months.....	146
	Concept Five: Affected	146
5.7.	Young Survey Five: 2009	147
	Concept One: Farmers.....	147
	Concept Two: Farm.....	147
	Concept Three: Regarding	148

Concept Four: Income.....	148
Concept Five: Doing	148
5.8. A Longitudinal Discussion Of Young Women’s Free-text Comments.....	148
5.9. A Longitudinal Analysis Of Mid-aged Women’s Free-text Comments.....	150
5.10. Mid-aged Survey One: 1996	152
Concept One: Children.....	152
Concept Two: Weight	153
Concept Three: Women	153
Concept Four: Take.....	153
Concept Five: Days	154
5.11. Mid-aged Survey Two: 2000.....	155
Concept One: Involved	155
Concept Two: Problem	155
Concept Three: Change.....	156
Concept Four: Farming	156
Concept Five: Things	156
5.12. Mid-aged Survey Three: 2003.....	157
Concept One: Happy	157
Concept Two: Working.....	157
Concept Three: Town.....	158
Concept Four: During	158
Concept Five: Survey.....	158
5.13. Mid-aged Survey Four: 2006	159
Concept One: Survey	159
Concept Two: Days.....	160

Concept Three: Living	160
Concept Four: Problems.....	160
Concept Five: Week.....	161
5.14. Mid-aged Survey Five: 2009.....	161
Concept One: Drought	161
Concept Two: Care.....	163
Concept Three: Home	163
Concept Four: Times.....	163
Concept Five: Income	163
5.15. A Longitudinal Discussion Of Mid-aged Women’s Free-text Comments	164
5.16. A Longitudinal Analysis Of Older-aged Women’s Free-text Comments	167
5.17. Older-aged Survey One: 1996.....	169
Concept One: Problem	169
Concept Two: Care.....	170
Concept Three: Things	170
Concept Four: Old.....	170
Concept Five: Months	171
5.18. Older-aged Survey Two: 1999.....	171
Concept One: Operation.....	171
Concept Two: Hospital.....	172
Concept Three: Survey.....	172
Concept Four: Days.....	172
Concept Five: Old	172
5.19. Older-aged Survey Three: 2003.....	173
Concept One: Week	173

Concept Two: Day	173
Concept Three: Farm.....	174
Concept Four: Past	174
Concept Five: Country	175
 5.20. Older-aged Survey Four: 2005	175
Concept One: Drought	175
Concept Two: Garden	176
Concept Three: Family.....	177
Concept Four: Take.....	177
Concept Five: Walking	177
 5.21. Older-aged Survey Five: 2008	178
Concept One: Age	178
Concept Two: Hospital	179
Concept Three: Feel	179
Concept Four: Son.....	179
Concept Five: Take	179
 5.22. A Longitudinal Discussion Of Older-aged Women's Free-text Comments.....	180
 5.23. A Longitudinal Generational Comparison Of Three Cohorts' Free-text Comments	184
 5.24. Longitudinal Analyses Conclusion	189

Chapter 6..... 190

6.1. Narrative Analyses Introduction	190
 6.2. A Young Woman's Narrative.....	192
Portrait of Tracey	192

Tracey's Narrative	193
6.3. A Mid-aged Woman's Narrative.....	202
Portrait of Wendy	202
Wendy's Narrative	203
6.4. An Older-aged Woman's Narrative	214
Portrait of Alice	214
Alice's Narrative	215
6.5. A Performative Analysis Of Young, Mid-aged And Older-aged Narratives	220
6.6. Narrative Conclusion	228
Chapter 7	230
7.1. A Comprehensive Approach To Health.....	232
7.2. Vulnerability In Drought.....	235
7.3. Connection To Place	239
7.4. Solastalgia	240
7.5. Complexity Of Women's Roles In Drought	243
7.6. Policy Implications	245
Gender is Key in Policy Development	246
Age is Key in Policy Development	246
Exceptional Circumstance / Drought Relief Assistance	247
Social Connectedness: National Broadband Network	247
Mental Health Care	248
National Disability Insurance Scheme (NDIS)	249

Ageing in Place	249
Farm Management Deposit Scheme	250
Longitudinal Research is Key	250
7.7. Strengths And Limitations.....	251
7.8. Future Directions	253
7.9. Final Conclusions	254
References	257
Appendix A ARIA+	282
Appendix B SF-36.....	286
Appendix C	287
Appendix D	289
Appendix E How To Interpret A Leximancer Map	291
Results: All Cohorts Map	295

List of Tables

TABLE 1 MAILING SCHEDULE FOR ALSWH SURVEYS	55
TABLE 2 NUMBERS OF COMMENTS WRITTEN BY WOMEN AT EACH SURVEY WAVE	57
TABLE 3 NUMBER OF WOMEN, COMMENTS AND WORDS INCLUDED IN THE SAMPLE, BY COHORT.....	61
TABLE 4 YOUNG WOMEN'S SAMPLE CHARACTERISTICS	65
TABLE 5 YOUNGER WOMEN: PRECIPITATION SCORES, NUMBER AND PERCENTAGE OF WOMEN LIVING WITH DRYNESS OR DROUGHT	67
TABLE 6: THE MID-AGED WOMEN'S SAMPLE CHARACTERISTICS	69
TABLE 7 MID-AGED WOMEN: PRECIPITATION SCORES, NUMBER AND PERCENTAGE OF WOMEN LIVING WITH DRYNESS OR DROUGHT	71
TABLE 8: THE OLDER-AGED WOMEN'S SAMPLE CHARACTERISTICS	73
TABLE 9 OLDER-AGED WOMEN: PRECIPITATION SCORES, NUMBER AND PERCENTAGE OF WOMEN LIVING WITH DRYNESS OR DROUGHT	75
TABLE 10 INTERVIEW SCHEDULE	88
TABLE 11 SUMMARY OF THREE METHODS AND AIMS	94
TABLE 12 YOUNG WOMEN'S THEMATIC TABLE.....	101
TABLE 13 MID-AGED WOMEN'S THEMATIC TABLE.....	106
TABLE 14 OLDER-AGED WOMEN'S THEMATIC TABLE	117
TABLE 15 YOUNG WOMEN'S SURVEY 1 LIKELIHOOD SCORES.....	140

TABLE 16 YOUNG WOMEN’S SURVEY 2 LIKELIHOOD SCORES.....	142
TABLE 17 YOUNG WOMEN’S SURVEY 3 LIKELIHOOD SCORES.....	143
TABLE 18 YOUNG WOMEN’S SURVEY 4 LIKELIHOOD SCORES.....	145
TABLE 19 YOUNG WOMEN’S SURVEY 5 LIKELIHOOD SCORES	147
TABLE 20 MID-AGED WOMEN'S SURVEY 1 LIKELIHOOD SCORES	152
TABLE 21 MID-AGED WOMEN'S SURVEY 2 LIKELIHOOD SCORES	155
TABLE 22 MID-AGED WOMEN'S SURVEY THREE LIKELIHOOD SCORES	157
TABLE 23 MID-AGED WOMEN'S SURVEY 4 LIKELIHOOD SCORES	159
TABLE 24 MID-AGED WOMEN'S SURVEY 5 LIKELIHOOD SCORES	161
TABLE 25 OLDER-AGED WOMEN’S SURVEY 1 LIKELIHOOD SCORES	169
TABLE 26 OLDER-AGED WOMEN’S SURVEY 2 LIKELIHOOD SCORES	171
TABLE 27 OLDER-AGED WOMEN’S SURVEY 3 LIKELIHOOD SCORES	173
TABLE 28 OLDER-AGED WOMEN’S SURVEY 4 LIKELIHOOD SCORES	175
TABLE 29 OLDER-AGED WOMEN’S SURVEY 5 LIKELIHOOD SCORES	178
TABLE 30 CONCEPTS FROM ALL COHORTS MAP	292

Table of Figures

FIGURE 1 SOLASTALGIA, ADAPTED FROM ALBRECHT (2005).....	13
FIGURE 2 YOUNG WOMEN'S LEXIMANCER MAP	139
FIGURE 3 MID-AGED WOMEN'S LEXIMANCER MAP	151
FIGURE 4 OLDER-AGED WOMEN'S LEXIMANCER MAP.....	168
FIGURE 5 TRACEY'S HEALTH AND DROUGHT MEASURES OVER TIME	192
FIGURE 6 WENDY'S HEALTH AND DROUGHT MEASURES OVER TIME	202
FIGURE 7 ALICE'S HEALTH AND DROUGHT MEASURES OVER TIME	214
FIGURE 8 ALL COHORTS MAP: YOUNGER, MID-AGED AND OLDER-AGED FREE-TEXT COMMENTS FOR ALL TIME POINTS	293
FIGURE 9 HEAT MAP OF CONCEPTS FROM ALL COHORTS' ANALYSIS	295

Abbreviations

ALSWH	Australian Longitudinal Study on Women's Health
ARIA	Accessibility/Remoteness Index of Australia
CWA	Country Women's Association
EC	Exceptional Circumstances
EOI	Expression Of Interest
IPCC	Intergovernmental Panel on Climate Change
NDIS	National Disability Insurance Scheme
NSW	New South Wales

List of publications and presentations

Components of this thesis have been published:

Rich, J. L., Wright, S. L., & Loxton, D. (2012). 'Patience, hormone replacement therapy and rain!' Women, ageing and drought in Australia: Narratives from the mid-age cohort of the Australian Longitudinal Study on Women's Health. *Australian Journal of Rural Health*, 20(6), 324-328.

Dobson A, Byles J, Dolja-Gore X, Fitzgerald D, Hockey R, Loxton D, McLaughlin D, Pachana N, Powers J, **Rich J. L.**, Sibbritt D & Tooth L. *Rural, remote and regional differences in women's health: Findings from the Australian Longitudinal Study on Women's Health*. Report prepared for the Australian Government Department of Health & Ageing, June 2011.

Invited presentations:

International and Interdisciplinary Conference on Emotional Geography, University of Groningen, The Netherlands June 2013. "Ageing in drought – A longitudinal thematic analysis of older women's experiences of drought in Australia" **Jane Louise Rich**, Deborah Loxton and Sarah Wright

The Australian Association of Gerontology NSW Division - Rural Conference Across the divide: lessons on care from urban and rural communities, Cessnock Performing Arts Centre, Cessnock NSW 2011. *Women, Ageing and Drought* **Jane Louise Rich**

Tom Farrell Institute for the Environment, University of Newcastle 2010 *Narratives from women in drought: a longitudinal exploration*. **Jane Louise Rich**.

Abstract

In the current context of climate change, weather temperatures and droughts are set to increase in intensity and frequency. It is unclear what the adverse health outcomes might be as a result of this experience. Some research suggests that experiences of drought challenge mental health and wellbeing and there are reports of increases in male suicide rates at that time (Hanigan, Butler, Kokic and Hutchinson 2012). What is not certain is how experiences of drought might affect women's health and wellbeing.

This is a public health thesis that draws together information from science, health, geography, and sociology to explore the lived experience of drought for three generations of Australian women. The project examines these experiences through three different studies. Firstly, a *thematic* analysis will explore the diversity and breadth of experiences of women in drought. Secondly, a *longitudinal* analysis will qualitatively explore the experiences of drought over time for Australian women and thirdly, three in-depth *narratives*, from telephone interviews with women, will illustrate the connections between the themes, by presenting women's stories in the wider context of their lives.

Data from the Australian Longitudinal Study on Women's Health (ALSWH) is analysed in these three studies to explore women's experiences of drought. This project is particularly interested in the implications of drought on the ageing and wellbeing of women. Data from three age groups of women is included in the analyses. The younger women were born between 1973-78, the mid-aged women were born between 1946-51 and the older-aged women were born between 1921-26. Three separate studies were conducted in each age group, totalling nine different analyses.

The first study conducted a *thematic* analysis of women's free-text comments collected by the ALSWH. The aim of this study was to assess drought in the wider context of women's lives and to examine diversity of experiences. This thematic analysis revealed several important insights. **Firstly**, there are generational differences in women's

experiences of drought. **Secondly**, this study revealed the importance of specific events surrounding women and their life in drought, such as raising families, caring for others, and maintaining their health and community involvement. **Thirdly**, this analysis found that gender was an important aspect of experiences of drought. Many women-specific themes were raised.

The second study aimed to uncover the *longitudinal* impact of living in drought. This chapter visually mapped each cohort's survey years and free-text comments to reveal common concepts and themes from the women's free-text comments. Leximancer software was used to assist in analysis. This study found **firstly** that a longitudinal lens is vital for drought research. **Secondly**, this study found that ageing needs to be a vital aspect of drought research. **Thirdly**, mental health is compromised during drought particularly when examined over time.

The third study aimed to enable women to tell their story of drought, through telephone interviews. In the *narrative* analyses the women's experiences were linked to quantitative health and rainfall data collected by the ALSWH. Results from this study build on the findings of the previous two studies by drawing together women's reflections and insights. The narratives provide the links and details between themes. Results found that **firstly**, women have important roles, particularly in caring for their families and husbands during drought. **Secondly**, ageing was raised as an important theme for each cohort's narrative. **Thirdly**, this chapter revealed the incredibly complex experience of drought, drought did not occur in isolation but as part of wider events in life.

This project concludes that drought is a gendered experience. This project adds that both gender and ageing must be considered when planning for future droughts. Together each of these three studies provides vital contributions to the field of gender, health and drought.