

Lynn Sudbury-Riley

Journal of Marketing Intelligence & Planning, 2014, 32 (6), 666-686.

UNWRAPPING SENIOR CONSUMERS' PACKAGING EXPERIENCES

Abstract

Purpose

This study investigates the experiences of older consumers with a range of product packaging.

Design/methodology/approach

The study uses qualitative diary research. Ten seniors recorded their packaging experiences over two weeks. Using a frame narrative that views ageing as multi-dimensional, diary entries uncover rich data that goes beyond physical age-related issues.

Findings

In addition to physical problems with packaging, older adults experience psychological frustration and feelings of alienation. Social implications of dependence on others are also discovered, despite many being purchasers of up-market luxury products.

Research limitations/implications

The study is exploratory and due to its qualitative methodology findings cannot be generalised to the wider population. Nevertheless it provides a starting point for future research into packaging and senior consumers.

Practical implications

The study has implications for all managers who participate in planning and designing brand packaging and calls for them to work more closely with ergonomics and design professionals in order to better plan for the needs of a large and growing sector of the population.

Social implications

Findings suggest that the basic need to feed oneself is hampered by some packaging, which of course is detrimental to the quality of life of older adults.

Originality/value

Few studies consider packaging and older consumers and this is particularly true in the marketing literature. This is the first study to use qualitative diary research in this context, and as such has several advantages over recall studies.

Keywords: Packaging, Usability, Inclusivity, Ageing, Older consumers, Seniors

1. Introduction

An integral dimension of a brand, packaging is crucial for integrated marketing communications and building consumer franchise through ease of use. Yet, research has neglected the area of physical interaction with packaging. Notably, both marketers and designers tend to fail to consider older consumers who are especially important in the context of the world's ageing population (Mumel and Prodnik, 2005; Niemelä-Nyrhinen, 2007; Thompson and Thompson, 2009). Indeed, less than 10% of advertising targets seniors (Carrigan and Szmigin, 2000; Milner and Higgs, 2004; Kessler *et al.*, 2009; Prieler *et al.*, 2011; Simcock and Sudbury, 2006), despite their relatively large share of spending

(Nielsen, 2012), and there has been no marketing research that addresses packaging and older people and only limited research in the design domain (Carse *et al.*, 2010; Duizer *et al.*, 2009; Yoxall *et al.*, 2010a). This study therefore fills an important gap in knowledge as the first to explore the actual experiences of older consumers.

This study is important and timely for a number of reasons. First, the world's ageing population means that tomorrow's markets will comprise increasing numbers of older people and by better understanding their unique needs, companies can take advantage of a lucrative and expanding market. Second, by using qualitative diary research this study overcomes some of the limitations of recall studies previously been used in design research. Third, the study was conducted in a natural setting (homes, cafes, etc.), overcoming the problems of laboratory experiments typically found in engineering and ergonomics. Fourth, a recent (2011) European Technical Specification for packaging ("ease of opening" CEN TS 15945) is set to be adopted as a British Standard in 2014 (British Standards Institute, 2011) and is likely to be used by consumer groups to report poor packaging and lobby manufacturers for improvements. Finally, design and ergonomics research focuses on physical age-related issues.

Age is experienced in different ways (Ong *et al.*, 2008; Vuori and Holmlund-Rytkönen, 2005) and gerontologists acknowledge that ageing is multidimensional, comprising social and psychological issues as well as physical concerns (Riley, 1985). This study therefore fills a gap left by previous design research that has focused largely on physical interactions. By using qualitative diary research, the study considers the physical interface and also uncovers a unique insight into the social and psychological implications of packaging experiences of senior consumers.

Specifically, the study was designed to:

1. Investigate the everyday physical experiences of older adults with a range of product packaging.
2. Capture the feelings that resulted from these packaging interactions.
3. Evaluate any social and/or psychological implications of packaging interactions.

The paper begins with a review of the packaging literature, highlighting significant user-perspective gaps, before outlining the increasing importance of older consumers. After explaining qualitative diary research as the methodology, the results are analysed within a multidimensional ageing framework. The paper concludes with a discussion of the implications for marketing and design practitioners and highlights the contributions to knowledge.

2. Product Packaging

There is research into logistical and technological improvements to packaging to better transport, protect and preserve products. Moreover, as 73% of people rely on packaging to aid their supermarket purchase decisions (Wells *et al.*, 2007), the importance of packaging from a marketing communications perspective has been investigated widely (Ampuero and Vila, 2006; Rettie and Brewer, 2000; Westerman *et al.*, 2013). Specific design elements have been studied to ascertain how consumers react differently from behavioural, neural and psychological perspectives (Reimann *et al.*, 2010). Additionally, research investigates packaging's effect on perceptions of product quality and volume (Sogn-Grudvåg and Østl, 2009), taste (Becker *et al.*, 2011), price (Mueller *et al.*, 2012), new product development (Nijssen, 1999) and encouraging healthy options (Pires and Agante, 2011). Studies of recyclable and sustainable packaging are increasing (Kassaye, 2001; Pujari and Wright, 1996; Vogel *et al.*, 2010).

Such advances have not been matched in design for usability. The “universal virtues” of packaging (Beckeman and Bramklev, 2007) comprise no reference to the consumer, yet to consumers the product and package is one and the same (George, 2005). In many organisations packaging is still defined in terms of technical criteria, with the goal of developing functional specifications “a more elaborate goal” (Oostendorp *et al.*, 2006, p. 207). Carse *et al.*'s (2010) study with packaging design professionals found that “it was not a specific requirement of the companies or their clients to make the packaging easy-to-open” (p. 291).

The concept of inclusive design underscores user diversity. It is a relatively new concept and views design decisions as having the potential to include or exclude end users due to variation in capabilities (Inclusive Design Toolkit, 2012). Thus inclusive design means considering the differing needs of diverse people (elderly, disabled, pregnant, children). In Carse *et al.*'s (2010) study, despite most of the packaging designers knowing about inclusive design, they had little or no knowledge of how to put it into practice, admitting that older adults were not routinely considered in design processes. Indeed, the ergonomics literature still classifies older adults as “extra-ordinary” (Kroemer, 2006), an astonishing situation, given that the world’s population is ageing and soon the old will outnumber the young in many parts. Clearly, designers have failed to keep up with demographic changes that mean older adults will not be extraordinary.

3. Senior Consumers

3.1 Population Ageing

The UN (2010) describes the current ageing of the world’s population as the most profound demographic change in history. A pervasive and truly global phenomenon without precedent or parallel means the young populations of the past are unlikely to reoccur. Over five decades, life expectancy at birth increased globally by almost 20 years. At the world level, the number of people over 60 will exceed the number of children by 2047, which has already occurred in many developed regions, and by 2050 one in every three persons in the developed world will be over 60 years old. The number of very old people is also increasingly substantially. By 2050 UN projections suggest that the number of people who are at least 80 years of age will reach 379 million. Moreover, due to advances in medical care, greater access to health care, healthier lifestyles and improved living conditions, healthy life expectancy has also risen sharply over the past several decades across North America and all EU member states (OECD, 2012).

3.2 The Senior Consumer Market

Although retirement ages, and indeed median age, differ across countries, consensus among gerontologists (e.g., English Longitudinal Study of Ageing), charities (e.g., Age UK), academics (Sudbury, 2004), and practitioners (e.g., SilverSurfers.net, SAGA) has resulted in age 50 becoming the inclusion point for studies, policies, and target markets. Globally therefore, the over-50s market comprises 1.4 billion consumers: 20.8% of the world’s population (US Census Bureau 2011), many of whom are relatively wealthy and willing to spend (Jones *et al.*, 2008; ONS, 2011). Despite evidence of poverty amongst the elderly (Arber, 2004), Baby Boomers’ annual spending power is \$3.4 trillion (CBS News, 2011), they own most assets across many countries (ILC-UK, 2010), and are the highest purchasers of a range of goods and services, including new cars, beauty products and a range of leisure activities (ONS, 2011). Contrary to the stereotype often found in Western culture of the old, decrepit, lonely person living in the past (Henwood, 1990), the majority of today’s seniors are happy and content (Urry and Gross, 2010).

Today's Baby Boomers are a unique cohort from a cultural and marketing perspective. In contrast to the "silent generation" who preceded them and grew up in the austerity of the post-war years with a tendency to conform (Lifecourse Associates, 2012), Boomers experienced a life-course emphasising choice, autonomy, self-expression and pleasure (Jones *et al.*, 2008). As a reaction to the US Depression, advertising shifted from class differences to age-related life-style differences. By the 1960s, the focus in society was on working class teenagers and this is the period in which the origins of mass consumption emerged. Subsequently, "socialisation into the new lifestyles of consumption has permeated the lives...of the participants of post-war youth culture" (Jones *et al.*, 2008, p.39). Baby Boomers shaped modern marketing (Thompson and Thompson, 2009) and Boomers grew up being prime target markets.

3.3 Types of Age

Chronology is not the universal way of classifying or measuring age. Age categories are embedded in every culture (Goody, 1976) and define the life course in stages such as young, middle-aged, and old. In worldwide terms the most common way of measuring age is by functionality (Keith, 1985) rather than chronology (Bell, 1972). Functional definitions of age fall into three major categories: physical or biological, social, and psychological (Birren, 1968). These three kinds of ageing can be seen as a hierarchy, whereby the concept of biological age (i.e., a prediction of residual life-span) is in turn partly subsumed under the concept of psychological age, which is concerned with the capacity of the individual to adapt. At the next level, social age includes social roles and habits. Thus, ageing is multidimensional in nature and no single component of ageing can be understood without reference to the others (Riley, 1985). So, a functional definition of age may involve an assessment of health or appearance (physical), or allude to a change in mental attitude or aptitude (psychological), or refer to a change in role such as retirement (social), or even an assessment of age involving all three.

Whilst chronological age is still a frequently used demographic variable in customer behaviour and segmentation research (Barak and Schiffman, 1981), its limitations have long been acknowledged (Adams, 1971). Age becomes a less reliable indicator of lifestyle as people grow older (Bell, 1972; Jarvik, 1975) so the number of years lived is a poor indicator of a person's attitudes and consumer behaviour (Chua *et al.*, 1990). Given the limitations of chronological age, the cliché that a person is as young or as old as they feel may be useful in understanding the behaviour of seniors. The majority of older adults do not consider themselves to be old (Sherman, 1994; Thompson *et al.*, 1990), and feel on average about 10 years younger than their actual age (Barak and Rahtz, 1999; Carrigan and Szmigin, 2000; Sudbury, 2004). Moreover, research shows self-perceived age gives a better insight into consumer behaviour than does chronological age (Cleaver and Muller 2002; Eastman and Iyer 2005; Kohlbacher and Chéron 2010; Stephens 1991; Sudbury and Simcock, 2009).

Yet despite their youthful outlook, increasing number, significant spending power and expectations of products developed for them, ageing does bring with it some physical declines which may affect their ability to function optimally. This study is the first to consider that such declines may hamper an older consumer's ability to open packaging, and ascertain the feelings that result from these experiences.

4. Method

4.1 Data Collection

Qualitative diary research (QDR), acknowledged to be an underused method in marketing (Patterson, 2005) but used successfully with older adults in health studies (Jacelon and Imperio, 2005; Johnson and Blytheway, 2001), is increasingly recognised as a relevant method to capture the practices and experiences of routine behaviours in everyday life (Elliott, 1997; Johnson and Blytheway, 2001; Kenten, 2010). QDR was therefore deemed to be suitable given the European Technical specification for packaging which suggests that the best way to find out whether packaging is easy to open is to ask real people to use it. Also, QDR overcomes the reliability limitations associated with recall techniques. Designers cannot always judge what effective design is without fully understanding the viewpoints and experiences of the users (Goddard and Nicolle, 2012) and in addition to recording actual events, QDR allows for an understanding about how those events are perceived (Plummer, 2001). Participants were fully briefed about the nature of the study and were asked to record all packing-related issues they experienced during a two-week period. Respondents were instructed to use their diaries as a confidante and explain how they felt as a result of packaging experiences. Indeed, diaries as research tools “offer the opportunity to investigate social, psychological and physiological processes within everyday situations” (Bolger *et al.*, 2003, p. 580). The diaries provided contained blank pages, which is thought to be superior to one in which there are a great number of specific instructions (Patterson, 2005), and resembled a true diary in that they were black, hard-backed, A5 in size and had red ribbon page-dividers.

Upon collection of the diaries, participants completed a short follow-up questionnaire comprising questions about any physical conditions they have, whether they had altered their shopping habits since completing their diaries and socio-demographic data. Additionally, self-perceived age was measured with the age identity scale (Cavan *et al.*, 1949) which asks people do they feel young, middle-aged or old, and the cognitive age scale (Barak and Schiffman, 1981) which is multidimensional and asks people how old they think they look (biological), how old they feel (psychological and biological), and how old they rate their behaviour and interests (psychological and social).

4.2 Participants

Diary studies have been successfully conducted with between 8 and 11 participants (Elliott, 1997; Kenten, 2010; Nicholl, 2010; Jacelon and Imperio, 2005) thus 10 participants were recruited. Participants were asked to keep the diary for two weeks, a period long enough to ensure a good picture of everyday life, while anything longer may be too demanding for older participants (Johnson and Blytheway, 2001). The European Technical specification for packaging suggests using “ordinary but older” consumers, thus a purposive sampling approach (Hesse-Biber and Leavy, 2005; Morse, 2006; Patton, 2002; Teddlie and Yu, 2007) was used with selection criteria aimed at achieving maximum variation within the sample. Eligibility criteria comprised:

1. Senior consumers (aged 50+)
2. Have primary responsibility for household grocery shopping and cooking
3. Be either fit and healthy or have an age-related illness or disability
4. Literate to a level required to complete the diary
5. Have the visual and physical capacity to be able to write in the diary (Jacelon and Imperio, 2005)

More females were recruited because older women live longer and are more likely to be responsible for shopping (Brennan, 2011). Several potential participants were initially selected and a snowball approach was used to recruit the remainder. Snowball or “word-of-mouth” (Umaña-Taylor and Bámaca, 2004, p. 267) techniques are deemed particularly appropriate when targeting vulnerable or marginalised participants (Liamputtong, 2007), or when a considerable amount of effort is needed to participate (Kenten, 2010; Madriz, 1998). All participants received shopping vouchers as an incentive. A profile of the sample is provided in table 1.

Insert Table 1 about here

5. Results and Discussion

The multidimensional ageing framework was used as a starting point for the data analysis, which, following the reiterative processes recommended by Pope *at el.* (2000), was supplemented with sub-categories as the analysis progressed. Diary entries varied in terms of length and detail, though all respondents had at least daily entries, and overall the dataset ranged from diaries containing only 15 pages of text to several which spanned over 40 pages. While most entries pertained to grocery products, other goods such as DIY materials, gifts, greetings cards, bed linen and medicines were also included.

5.1 Positive Experiences

Several diarists reported brand loyalty on the basis of easy to use packaging, though these tended to stress that the product has to be good, too.

“Not only do they taste great, but they have really good strong packaging that can be folded over and sealed so the biscuits keep fresh” (Anne, 71).

Moreover, and contrary to stereotypes of dependency, frailty and nostalgia, many participants welcomed modern packaging concepts:

“Blister tablets very easy to open, not so the bottles that used to be used” (Teresa, 73).

“Discovered organic tomatoes in recyclable punnet and cellophane which can be put on compost. Now that’s progress” (Katie, 60).

Nevertheless, poor experiences with packaging outnumbered positive experiences considerably.

5.2 Physical Ageing

Ageing is not the same thing as illness, thus Eisdorfer and Wilkie (1977) distinguish between biological or primary ageing (ageing processes independent of stress and disease) and secondary ageing (disabilities resulting from trauma and illness). All the physical aspects of primary ageing present marketers with challenges (Thompson and Thompson, 2007), but decline in vision and changes to skeletal muscle are the most important here.

5.2.1 Primary ageing

Diary entries relating difficulties in reading print and usage instructions were common; summed up by entries such as:

"I received a gift – a box of Chocolates. I had no idea what it was. It was very frustrating, I couldn't make out anything on the packaging even though I was wearing glasses...As far as I'm concerned very poor design, and I was embarrassed to have to ask what it was" (Elizabeth, 61).

Age-related presbyopia, resulting from loss of elasticity of eye lenses, affects ability to read ingredients and usage instructions. Other age-related changes result in lenses becoming increasingly opaque, leading to difficulty in differentiating between some colours (Chavalkul *et al.*, 2011). Ability to detect contrast also diminishes with age, creating problems in distinguishing target from background (Moschis, 1992); changes in light sensitivity result in greater difficulty in adapting to glare (Schewe, 1988); and under poor illumination people over 50 have diminished vision (Kosnik *et al.*, 1988). The entry below illustrates potentially serious problems arising from an inability to decipher usage instructions:

"I could not read the instructions on the cream I had been prescribed, because it was very small pale grey writing on a white background. I will now have to wait until my daughter calls so she can advise me" (Arthur, 71).

In addition to illustrating problems with colour and contrast differentiation, Arthur's quote reveals dependency on others for what should be a routine task. The dangers of a person being unable to read instructions on prescription medicines are a substantial threat to patient safety (Hellier *et al.*, 2006) but the social and psychological consequences are often more deeply hidden and consequently often ignored. Not just older adults have difficulty reading instructions. Worldwide, 775 million adults lack basic reading skills (UNESCO, 2012). 14 per cent or 32 million of US adults (US Department of Education, 2013) and around 16 per cent, or 5.2 million adults in England can be described as "functionally illiterate" (The National Literacy Trust, 2012). Consequently, low health literacy costs billions of dollars in medication noncompliance (Adkins and Corus, 2009). These figures may rise significantly if consideration is given to the numbers of older adults, though literate, who are unable to read instructions on medicines because of the size or colour of the fonts chosen for the packaging.

Difficulties of access to the product were experienced across the whole range of packaging types, most often with ring-pulls and child/tamper-proof mechanisms:

"While I can see the importance of squeeze and twist caps for child safety, without an aid purchased through Mobility I would be unable to open most of these products." (Margaret, 55).

"... squeezing the bottle of [toilet cleaner] in the marked opposite sides of the cap ended up with me unthinkingly grabbing tight the bottom of the bottle ...the toxic liquid ...then spurted out" (Thelma, 56).

"...the tub of pasta sauce required a small piece of plastic on the rim to be broken to be able to lift the lid. With weak hands, it was almost impossible, and the product ended up everywhere. It made me want to scream" (Margaret, 55).

Clearly, respondents find some forms of packaging difficult, time-consuming and frustrating, but they also experience problems associated with wastage and mess. Furthermore, the word “toxic” reveals a genuine fear of harm. Indeed, thousands of consumers need hospital treatment from injuries through packaging each year (Galley *et al.*, 2005). Difficulties are exacerbated by age-related anthropometrical changes leading to less muscle flexibility (Montepare and Zebrowitz, 1998). Muscle strength decreases from about age 50, resulting in a loss of grip strength so that the average 70 year old has the muscular strength of a 10 year old (Yoxall, 2010a). This condition can be made worse with arthritis. Females have even less muscle strength than males (Yoxall *et al.*, 2010a) yet women are more likely to live longer and alone than older men. Moreover, much work has changed from manual to non-manual (Yoxall *et al.*, 2010b) so this problem may be exacerbated for future generations.

5.2.2 Secondary ageing – health and wellbeing

Lifestyles promoting health and wellbeing are important in delaying the onset of secondary ageing, which is related to illness and trauma. Yet attempts to eat healthily are often impeded:

“In the supermarket I was looking for salt/fat/calories -it got me angry as the wording and numbers were so small” (Teresa, 73).

“I find this often- labelling and nutritional information is far too involved and not clear enough to assist the consumer” (Vicky, 62).

Despite showing more interest in healthy eating, many seniors have less nutrition knowledge than younger consumers (Grunert *et al.*, 2010). Food labels and adherence to dietary recommendations are especially important for chronic disease populations (Lewis *et al.*, 2009) but even young consumers find some nutritional information too technical (Nørgaard and Brunsø, 2009) and think they understand labels better than they actually do (Sharfa *et al.*, 2012). Given the new EU legislation on nutrition and health claims, there is a need to better understand how consumers of all ages and abilities use this information to make food choices (van Trijp, 2009).

Experiencing hindrance with packaging can lead to psychological consequences. Indeed, the onset of illness or physical handicap is one of the primary reasons why people begin to feel old (Sherman, 1994), a phenomenon alluded to in the following entry:

“I have been diagnosed with osteoarthritis in my hands...I realize how difficult it must be for older people to handle all manner of objects. Having had to open for years the small pots of milk served in a café for my mother, I am now experiencing the difficulties of getting a grip of a small piece of plastic, gently enough not to tear it off and firmly enough to pull it off” (Thelma, 56).

Those suffering illnesses also reported difficulties with prescribed medications:

“It was hard getting a tablet out...I found I actually damaged the capsule and lost some of the powder from inside as I had to exert so much pressure” (Arthur, 71).

“Received new prescription and packaging of tablets has changed...now the backing is some form of plastic. My hands are weak and I could not push out the pills. As these are painkillers I don’t want to have to search for some way to get at these pills. Very annoyed” (Margaret, 55).

While a great deal of research and development focuses on the safe use of medicines (Ward *et al.*, 2010), child-proof packaging is also "age-proof" and can represent a considerable barrier to compliance (Schoberberger *et al.*, 2007).

5.3 Psychological Ageing

5.3.1 Subjective well-being

Many diarists identified psychological reactions such as feelings of physical vulnerability, despite only two participants incurring any physical harm (broken fingernails). Security and safety are key psychological factors to seniors as people tend to feel more vulnerable as they age (Moschis, 1992). Evidence of vulnerability was apparent:

"Electric toothbrush refills...strong scissors were required to cut through the double layers of plastic and the enclosed cardboard. The plastic edges exposed were then lethal, they were so sharp" (Thelma, 56).

"Tinned ham... you could have cut your fingers quite easily. I won't be buying it anymore" (Richie, 73).

"Sardines...not easy to open and felt rather exposed to the dangers of sharp metal" (Vicky, 62).

Diaries revealed a wide range of packaging perceived as potentially harmful, including ring-pulls, foil lids and childproof tops. Moreover, only one respondent reported using a specific aid, with the majority resorting to kitchen knives, scissors, teeth, screwdrivers and even electric carving knives. Inclusive design incorporates "mainstream products... that are accessible to and usable by as many people as reasonably possible....without the need for special adaptation" (Yoxall *et al.*, 2010b, p.187). Ironically, participants courted injury by using inappropriate opening methods. Moreover, several reported making changes in the products/brands they bought on the basis of the difficulties experienced, supporting estimates that nearly 20% of older people stop buying certain products because of difficulties opening them (Galley *et al.*, 2005).

5.3.2 Self concept

Self-perceived age is a dimension of self-concept (Barak and Gould, 1987). No participant felt old, indeed despite a mean chronological age of 64 the mean cognitive age was only 51, with many respondents suggesting that the old are people much older than themselves, a phenomenon previously witnessed in the gerontology literature (Seccombe and Ishii-Kuntz, 1991):

"I opened a small jar of jam. Quite difficult to open, I should imagine anybody with any kind of arthritis in the hand would find it impossible" (Richie, 73).

"...those plastic caps that (have) to be firmly depressed and then twisted to open. I found it difficult, but what about older, arthritic hands? Well-nigh impossible sometimes, I imagine" (Vanessa, 58).

There were, however, other entries that demonstrate an awareness of ageing:

"Bleach...opening it needs good strength in thumbs which I have problems with now" (Vicky, 60).

"Prescription tablets...I've become frightened to apply too much pressure (even on days when the arthritis lets me) in case I burst the carton" (Arthur, 71).

"...I'm now finding this type of cap much more difficult to open..." (Katie, 60).

"Floor cleaner...exhausting trying to get the bottle open...it is childproof but also OAP proof" (Elizabeth, 61).

The value of self-concept research for marketers is primarily in how it may influence attitudes and behaviour. The following quotes demonstrate feelings of uselessness, embarrassment, frustration, anger, or even self-reproach:

"Bought a sandwich I ripped open the package and the sandwich fell to the floor. A very frustrating experience..." (Elizabeth, 61).

"Carton ... difficult to open and the juice spilled out...made me feel angry" (Vicky, 62).

"...surely an easier and convenient re-sealer could be used ...I felt total frustration" (Vicky, 62).

"...Had to use a pair of scissors to cut through plastic and cardboard – it was very frustrating" (Anne, 71).

"...perhaps it was my fault for squeezing it too far down" (Thelma, 56).

Obviously, by (however inadvertently) making customers experience these negative feelings, businesses are risking losing these customers.

5.4 Social Ageing

The preceding section also has implications for social ageing. If a person is made to feel inadequate, there is a chance that inadequacy becomes a self-fulfilling prophecy. The gerontological theory of social breakdown syndrome (Kuypers and Bengston, 1973) describes a vicious circle where negative aspects of ageing create a vulnerability to and dependence on sources of external labelling. Atrophy of skills, together with the internalisation of feelings of uselessness can lead an older person to acting that role as they identify with the negative feelings. Diary entries relating to the more profound feelings of helplessness and self-blame suggest that perceptions of incompetence are being internalised, as evidenced by reports of dependency on others and feelings of uselessness and incompetence:

"Pure fruit juice....the screw top was extremely hard to turn. I had to get a male's strong arm to open it. Even he said it was hard" (Anne, 71).

"Tube of (DIY) material...top was made of thick plastic that had to be cut off. Used every knife in the house, including an electric knife that will cut through frozen meat and bone. After half an hour had to ask a neighbour for help. He used a hacksaw to open it. It was most humiliating" (Margaret, 55).

Independent living is another social issue that can be compromised by difficulties in opening packaging (Yoxall *et al.*, 2010b). Over thirty years have passed since Sirgy *et al.* (1982) argued that the interface between marketing and quality of life is “real and substantive” (p. 82) yet many entries revealed clear examples of marketing’s failure to consider such implications.

5.5 Smashing the stereotypes: marketing-savvy, environmentally conscious consumers

Importantly, in many instances, participants revealed themselves as marketing-savvy consumers:

“...organic fresh British chicken...picture of farmer and a bit of blurb about him and the chickens and high welfare standards required by the supermarket but no mention of what those standards were!” (Elizabeth, 61).

“Why is everything so over-packaged? Most of it goes straight in the bin which, however disposed of, costs money and doubtless makes the product more expensive to purchase. The problem I suspect is partly the psychology of merchandising. The customer buying an up market product expects it to be reflected in up market wrapping...we are wasting more and more in the process of selling to the consumer” (Vanessa, 58).

Indeed, the environmental impact of packaging, though not originally within the research remit of this study, emerged time and again:

“Why wrap all the finest fruit and vegetables in lots of packaging? First the outer wrap, then a moulded cover and tray, all to dispose of, I had lots to get rid of today... Why can’t they use string bags more?” (Katie, 60).

“...environmentally the amount of plastic required to protect imported vegetables is far greater than home-grown produce. Presumably the trays are sturdier to withstand the extra tossing around. I had never noticed this until given this task (i.e. the research diary) assuming it is only air miles that are an environmental issue when making my choice” (Thelma, 56).

“...the huge “wrapping juggernaut” is steaming down the highway and it’s going to be a big job to slow it down...the weekend papers are growing like Topsy in volume...they all are encased in a plastic film – more stuff for recycling. Much of the bumph goes straight to recycling. What a waste of everyone’s time and money” (Vanessa, 58).

The majority of respondents expressing concerns about packaging’s environmental impact also tended to be consumers of up-market expensive products, suggesting a potential niche for companies to supply ethically sourced, high quality produce with the minimum of low-impact, recyclable packaging.

6. Conclusions and implications

The ageing population requires greater consideration than it currently receives from many businesses. This is the first study into seniors and their experiences of packaging and therefore makes a contribution to knowledge pertaining to seniors, and to the packaging literature. The use of QDR provided a number of advantages over alternative methodologies: not least that it does not rely

on recall and provides deep insights into experiences. As expected, many instances of consumer vulnerability were identified, and as such the study makes a contribution to this under researched area. An unexpected finding is that many participants were extremely conscious of packaging's environmental impact. It is proposed that more research is conducted into the environmentally-conscious consumer behaviour of seniors than is already available. The research also revealed a group of marketing-savvy consumers of relatively expensive products, suggesting a clear opportunity for marketers to target older adults with up-market environmentally-friendly products in easy to use packaging.

The choice of the multidimensional ageing framework as a narrative to make sense of the diary entries provided several benefits over previous studies. First, the framework enabled analysis to go beyond the obvious, and delve deeper into the psychological and social implications of these experiences and therefore provided wide ranging implications. Prior studies into packaging tend to concentrate on narrow and specific issues; for example previous marketing studies tend to focus on brand communication, the ergonomic literature on physical issues, the food science literature on nutrition and consumer education, while others focus on public policy implications. Second, the study raises the issue of whether existing consumer behaviour theories are adequate in capturing the multidimensionality of ageing, which will become increasingly important as the population ages. The study demonstrates that the application of gerontology concepts when studying seniors is useful to consumer behaviour research. Given the so-called "demographic time bomb" that is global population ageing, understanding of the difficulties encountered by those who are growing older is a starting point for business to better serve the huge and important senior markets of tomorrow.

The study also brings the concept of inclusive design into the consumer literature. Inclusive design is about maximising the market potential of products (Chavalkul *et al.*, 2011) which makes obvious business sense, but has until now been limited to the design and ergonomics literature. Large numbers of seniors are switching brands on the basis of the difficulties with packaging (Galley *et al.*, 2005), segments of older consumers are experiencing difficulty in making in-store buying decisions (Walsh and Mitchell, 2005), and, given their cultural experiences and socialisation, it is likely that the Baby Boomers will be even less tolerant of brands that fail to cater to their needs than were previous generations. Costs are less and lead times shorter for new packaging than for new products (Barnes *et al.*, 2003), thus an obvious source of competitive advantage lies in the hands of those marketers willing to make the change. Embracing the spirit rather than the letter of the law, perhaps by adopting the guidance provided by the European Technical specifications, is a starting point and one that could make a real difference if marketed effectively.

This study is also useful to researchers working with vulnerable consumers. Ozanne *et al.* (2005) identified a group of low-literate consumers who are alienated and often disempowered in the marketplace. Their consumers made mistakes such as buying the wrong products, failing to cook food properly and taking medication incorrectly, and the findings reported here have some clear parallels with their research. "Consumer literacy" extends beyond reading labels and includes understanding consumer rights, knowing how to manage service encounters and make complaints (Ozanne *et al.*, 2005). In contrast to low-literate consumers and despite them having difficulty reading labels and instructions due to a combination of poor vision and poor packaging design, many of today's older adults, particularly the Baby Boomers, have been socialised to expect that businesses will give them what they want. They are unlikely to accept poor service in the same way as other vulnerable groups. Ozanne *et al.* (2005) found that for many vulnerable consumers, coping strategies include constraining their choice of products and retailers, and some evidence of this behaviour emerged in the current study. This of course provides a real opportunity for those firms who are willing to give full consideration of vulnerable consumers in their packaging design. Many will not be afraid to change their usual brands for alternatives that they can more easily read, open

and understand. Moreover, within strategy documents of the OECD, the EU and UK government the issue of consumer empowerment is gaining prominence (Brennan and Coppack, 2008) and if businesses fail to voluntarily comply with the needs of consumers they may well be forced to do so.

Participants' experiences of packaging ranged from mild inconvenience to extreme frustration and even humiliation, even among those in their 50s. These findings reveal a clear marketing opportunity for brand managers to differentiate their brands in a relatively inexpensive way by working closely with packaging designers and others in the packaging value chain. Currently, the consumer is not the most significant stakeholder; rather the brand owner and the retailer form the nexus of influence, with the brand owner the lead actor (Akenji and Bengtsson, 2010). Crucially, then it is in the hands of marketers to ensure more interaction with final consumers (Rundh, 2009) and other actors such as designers and ergonomics professionals to drive the change toward packaging that is easy to open, easy to re-use and re-seal, has clear and comprehensible information, and does not present the risk of physical injury as a benefit to all consumers. The long-noted relative neglect of older consumers (Carrigan and Szmigin, 1999, 2003) continues to this day (Giegetich, 2012). The current study, then, provides all managers who participate in planning and designing packaging with an insight into the needs of a large and growing sector of the population especially in light of its identification of a group of marketing-savvy consumers of expensive products. Design mistakes with packaging utilised by these consumers has potentially serious and negative implications for the customer-brand relationship (Underwood, 2003). The study demonstrates that while senior consumers have to function in the marketplace with deterioration of vision, skeletal muscle and other age-related physical declines, they still do not feel old. However, the frustration caused by some packaging experiences may well lead them to switch brands. Several diarists reported brand loyalty on the basis of excellent packaging as well as a good product, while others reported making changes to their purchases due to difficulties with packaging. Better planning now will ensure the large and lucrative markets of tomorrow will not be alienated by packaging design that fails to meet their needs.

Managers must understand that key triggers of vulnerability are often not intrinsic to consumers (Commuri and Ekicki, 2008). Rather, as is the case here, external factors are the causes, and therefore managers need to be cautioned against classifying the whole senior market as vulnerable. Indeed, the study also demonstrates plenty of incidents where seniors revealed themselves to be savvy consumers not easily taken in by, as one participant eloquently put it, "a bit of blurb". At the same time, many examples of consumer vulnerability were revealed. Practising a true marketing orientation entails grounding marketing practices in the needs and interests of consumers (Ozanne and Saatcioglu, 2008) and everyone engaged in marketing has an opportunity to help make the marketplace work in a more fair and just way (Karparkin, 1999). Adkins and Jae (2010) warn of growing consumer vulnerability due to increasing numbers of immigrants and the numbers of people in whose homes the primary language spoken is non-English. If the forecasts in the world's ageing population are also considered, it is likely that the projected numbers of vulnerable consumers will swell significantly. Designers, marketing managers and policy makers have the ability to mitigate some experiences of consumer vulnerability through better packaging design and with relatively little cost in comparison to other marketing expenditure such as new product development or advertising.

Better design is not just about designing for the aged. Indeed, the vulnerable are distinct from the disadvantaged (Brenkert, 1998). Even young able bodied people often struggle with packaging (Yoxall *et al.*, 2010a). Old and young alike prefer large print size on white space in medicines (Wogalter and Vigilante, 2003); consumers of all ages prefer nutrition logos that are easy to read and recognise (Bialkova and van Trip, 2010) and this is particularly important because consumers are greatly influenced by nutrition claims on packaging (Carillo *et al.*, 2012). The 94,000 packaging

accidents to occur in one year in the UK alone cost the National Health Service £12 million (Lewis *et al.*, 2007) and did not all happen to older people. The motto of the Centre of Applied Gerontology may help marketing, design and ergonomics professionals to improve current performance: "Design for the young and you exclude the old; design for the old and you include the young". Designers often position themselves as solution providers, but an emerging call urges a change of mind set among designers to user-led innovation (Dong, 2009). It is time marketers did the same.

References

- Adams, D. L. (1971), "Correlates of satisfaction among the elderly", *The Gerontologist*, Vol. 11, Part II, pp. 64-68.
- Adkins, N. R. and Corus, C. (2009), "Health Literacy for Improved Health Outcomes: Effective Capital in the Marketplace", *Journal of Consumer Affairs*, Vol. 43 No. 2, pp. 199-222.
- Adkins, N. R. and Jae, H. (2010), "Marketplace vulnerability of limited English proficient consumers: Opportunities to increase knowledge in macromarketing," *Journal of Macromarketing*, Vol. 30 No. 1, pp. 93-104.
- Akenji, L. and Bengtsson, M. (2010), "Is the customer really king? Stakeholder analysis for sustainable consumption and production using the example of the packaging value chain", *Sustainable Consumption and Production in the Asia-Pacific Region: Effective Responses in a Resource Constrained World*, Vol. III, pp. 23-46.
- Ampuero, O. and Vila, N. (2006), "Consumer perceptions of product packaging", *Journal of Consumer Marketing*, Vol. 23, pp. 100-12.
- Arber, S. (2004), "Gender, marital status and ageing: Linking material, health and social Resources", *Journal of Aging Studies*, Vol. 18, pp. 91-108.
- Barak, B. and Gould, S. (1987), "Male and female fashion innovativeness and opinion leadership: A research note", *Developments in Marketing Science*, Vol. 10, pp. 110-114.
- Barak, B. and Rahtz, D. R. (1999), "Cognitive Age: Demographic and psychographic dimensions", *Journal of Ambulatory Care Marketing*, Vol. 3 No. 2, pp. 51-65.
- Barak, B. and Schiffman, L. G. (1981), "Cognitive Age: A nonchronological age variable", *Advances in Consumer Research*, Vol. 8, pp. 602-606.
- Barnes, C., Southee, C. And Henson, B. (2003), "The impact of affective design of product packaging upon consumer purchase decisions", in: *DPPI 2003 - Proceedings of the 2003 International Conference on Designing Pleasurable Products and Interfaces*, Pittsburgh, PA, pp. 134-135.
- Beckeman, M. and Bramklev, C. (2007), "Past and present roles of packages in logistics", Paper presented at the 19th NOFOMA Conference, 7-8 June, Reykjavik, Iceland.

Becker, L., van Rompay, T., Hendrik, J. L., Schifferstein, N.J. and Galetzka, M. (2011), "Tough package, strong taste: The influence of packaging design on taste impressions and product evaluations", *Food Quality and Preference*, Vol. 22, pp. 17–23.

Bell, B. (1972), "Significance of functional age for interdisciplinary and longitudinal research", *Aging and Human Development*, Vol. 3 No. 2, pp. 145-147.

Bialkova, S. and van Trip, H. (2010), "What determines consumer attention to nutrition labels?", *Food Quality and Preference*, Vol. 21, pp. 1042-1051.

Birren, J. E. (1968), "Principles of research on aging", in Neugarten, B. L. (Ed.), *Middle Age and Aging: A Reader in Social Psychology*, University of Chicago Press, Chicago, IL, pp. 545-551.

Bolger, N., Davis, A., and Rafaeli, E. (2003), "Diary methods: Capturing life as it is lived", *Annual review of Psychology*, Vol. 54, pp. 579-616.

Brenkert, G. G. (1998), "Marketing and the vulnerable", *Business Ethics Quarterly*, Vol. 8 No. 1, pp. 7-20.

Brennan, B. (2011), *Why She Buys: The new strategy for reaching the world's most powerful consumers*, Crowne, New York, NY.

Brennan, C. and Coppack, M. (2008), "Consumer empowerment: Global context, UK strategies and vulnerable consumers", *International Journal of Consumer Studies*, Vol. 32, pp. 306–313.

British Standards Institute (2011), "Easy to open packaging", available at: <http://www.bsigroup.com/Documents/consumer-resources/BSI-Consumer-Brochure-Packaging-UK-EN.pdf> (accessed 28 November 2012).

Carillo, E., Varela, P. and Fiszman, S. (2012), "Effects of food package information and sensory characteristics on the perception of healthiness and the acceptability of enriched biscuits", *Food Research International*, Vol. 48 No. 1, pp. 209-216.

Carrigan, M. and Szmigin, I. (2003), "Regulating ageism in UK advertising: an industry perspective", *Marketing Intelligence & Planning*, Vol. 21 No. 4, pp. 198 – 204.

Carrigan, M., and Szmigin, I. (2000), "The older consumer as innovator: Does cognitive age hold the key?", *Journal of Marketing Management*, Vol. 16 No. 5, 505–527.

Carrigan, M. and Szmigin, I. (1999), "In pursuit of youth: what's wrong with the older market?", *Marketing Intelligence & Planning*, Vol. 17 No. 5, pp. 222 – 231.

Carse, B., Thomson, A., and Stansfield, B. (2010), "Use of biomechanical data in the inclusive design process: Packaging design and the older adult", *Journal of Engineering Design*, Vol. 21 No.2–3, pp. 289–303.

Cavan, R. S., Burgess, E. W., Havinghurst, R. J. and Goldhamer, H. (1949), *Personal Adjustment in Old Age*, Science Research Associates, Chicago, IL.

CBS News (2011), "The new target demographic: Baby Boomers", March 6, Available at: http://www.cbsnews.com/8301-3445_162-20039772.html (accessed 28 November 2012).

Chavalkul, Y., Saxon, A. and Jerrard, R. N. (2011), "Combining 2D and 3D design for novel packaging for older people", *International Journal of Design*, Vol. 5 No. 1, pp. 43-58.

Chua, C., Cote, J. A. and Leong, S. M. (1990), "The antecedents of cognitive age", *Advances in Consumer Research*, Vol. 17, pp. 880-885.

Cleaver, M. and Muller, T. E. (2002), "I want to pretend I'm eleven years younger: Subjective age and senior's motives for vacation travel", *Social Indicators Research*, Vol. 60, pp. 227-241.

Commuri, S. and Ekicki, A. (2008), "An Enlargement of the Notion of Consumer Vulnerability", *Journal of Macromarketing*, Vol. 28, pp. 183- 186.

Dong, Hua (2009), "Strategies for teaching inclusive design", *Journal of Engineering Design*, Vol. 21 No. 2-3, pp. 237-251.

Duizer, L. M., Robertson, T. and Han, J. (2009), "Requirements for packaging from an ageing consumer's perspective", *Packaging Technology and Science*, Vol. 22 No. 4, pp. 187-197.

Eastman, J. K. and Iyer, R. (2005), "The impact of cognitive age on internet use of the elderly: An introduction to the public policy implications", *International Journal of Consumer Studies*, Vol. 29 No. 2, pp. 125-36.

Eisdorfer, C. and Wilkie, F. (1977), "Stress, disease, ageing and behaviour", in Birren, J.E. and Schaie, K.W. (Eds.), *Handbook of the Psychology of Ageing*, Van Nostrand Reinhold, New York, NY, pp. 251-75.

Elliott, H. (1997), "The use of diaries in sociological research on health experience", *Sociological Research Online*, available at: <http://www.socresonline.org.uk.ezproxy.liv.ac.uk/2/2/7.html> (accessed 30 May 2013).

Galley, M., Elton, E. and Haines, V. (2005), "Packaging: A box of delights or a can of worms? *The contribution of ergonomics to the usability, safety and semantics of packaging*", Paper presented at the FaraPack Briefing 2005: New Technologies for Innovative Packaging, Loughborough, UK, available at: <https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/3105> (accessed 15 February 2012).

George, J. (2005), "On paper, a world of opportunity", *Packaging World Magazine*, April, p. 36.

Giegerich, A. (2012), "Boomers still ignored by most marketers", *Portland Business Journal*, available at: <http://www.bizjournals.com/portland/news/2012/10/08/milner-businesses-miss-boat-by-ignoring.html> (accessed 30 October 2012).

Goddard, N. and Nicolle, C. (2012), "What is good design in the eyes of older users?", In Langdon, P., Clarkson, J., Robinson, P., Lazar, J. and Heylighen, A. (Eds.) *Designing Inclusive Systems: Designing Inclusion for Real-World Applications*. Springer, London, pp. 175-184.

Goody, J.(1976), "Aging In nonindustrial societies", in Binstock, R. H. and Shanas, E.(Eds.), *Handbook of Aging and the Social Sciences*, Van Nostrand Reinhold, New York, NY, pp. 117-129.

Grunert, C. G., Wills, J. M. and Fernandez-Celemin, L. (2010), "Nutrition knowledge, and use and understanding of nutrition information on food labels among consumers in the UK", *Appetite*, Vol. 55 No. 2, pp. 177–189.

Hellier, E., Edworthy, J., Derbyshire, N. and Costello, A. (2006), "Considering the impact of medicine label design characteristics on patient safety", *Ergonomics*, Vol. 49 No.5-6, 617-630.

Henwood, M. (1990), "No sense of urgency: Age discrimination in health care", in McEwen, E. (Ed.), *Age: The Unrecognised Discrimination*, Age Concern, London, UK, pp. 43-57.

Hesse-Biber, S. N. and Leavy, L. P. (2005), *The Practice of Qualitative Research*, Sage, Thousand Oaks, CA.

ILC-UK (2010), "The Golden Economy", available at:
http://www.ilcuk.org.uk/index.php/publications/publication_details/the_golden_economy_the_consumer_marketplace_in_an_ageing_society (accessed 1 November 2010).

Inclusive Design Toolkit (2012), available at:
<http://www.inclusivedesigntoolkit.com/betterdesign2/whatis/whatis.html> (accessed 8 April 2012).

Jacelon, C. and Imperio, K. (2005), "Participant diaries as a source of data in research with older adults", *Qualitative Health Research*, Vol. 15, pp. 991-997.

Jarvik, L. F. (1975), "Thoughts on the psychobiology of aging", *American Psychologist*, Vol. 30 May, pp. 576-583.

Johnson, J. and Bytheway, B. (2001). "An evaluation of the use of diaries in a study of medication and later life", *International Journal of Social Research Methodology*, Vol. 4 No. 3, pp. 183-204.

Jones, I. R., Hyde, M., Victor, C. R., Wiggins, R. D., Gilleard, C. And Higgs, P. (2008), *Ageing in a Consumer Society: From passive to active consumption in Britain*, Policy Press, Bristol, UK.

Karpatkin, R. H. (1999), "Toward a Fair and Just Marketplace for All Consumers: The Responsibilities of Marketing Professionals", *Journal of Public Policy & Marketing*, Vol. 18 No. 1, pp. 118-122.

Kassaye, W. W. (2001), "Green dilemma", *Marketing Intelligence & Planning*, Vol. 19 No 6 pp. 444 – 455.

Keith, J. (1985), "Age in anthropological research", in Binstock R. H. and Shanas, E. (Eds.), *Handbook of Aging and the Social Sciences*, Second Edition, Van Nostrand Reinhold, New York, NY, pp. 231-263.

Kenten, C. (2010), "Narrating Oneself: Reflections on the Use of Solicited Diaries with Diary Interviews", *Qualitative Social Research*, Vol. 11 no 2, Available at: <http://www.qualitative-research.net/index.php/fqs/article/view/1314/2989#g2> (accessed 30 May 2013).

Kessler, E.-M., Schwender, C. and Bowen, C. E. (2009), "The portrayal of older people's social participation on German prime-time TV advertisements", *The Journals of Gerontology*, Vol. 65B No. 1, pp. 97-106.

Kohlbacher, F. and Chéron, E. J. (2010), "Segmenting the silver market using cognitive age and the list of values: Empirical evidence from Japan", *European Advances in Consumer Research*, Vol. 9, pp. 512-513.

Kosnik, W., Winslow, L., Kline, D. and Rasinski, R. (1988), "Visual changes in daily life throughout adulthood", *The Gerontologist*, Vol. 43 No. 3, pp. 63-70.

Kroemer, K. H. E. (2006), *Extra-Ordinary Ergonomics: How to Accommodate Small And Big Persons, The Disabled and Elderly, Expectant Mothers, and Children*, Human Factors and Ergonomics Society/CRC Press, Santa Monica, CA.

Kuypers J.A. and Bengston, V.L. (1973), "Social breakdown and competence: A model of normal aging", *Human Development*, Vol. 16, pp. 181-201.

Lewis, J. E., Arheart, K. L., LeBlanc, W. G., Fleming, L. E., Lee, D. J., Davila, E. P., Cabán-Martinez, A. J., Dietz, N. A., McCollister, K. E., Bandiera, F. C. and Clark, J. D. (2009), "Food label use and awareness of nutritional information and recommendations among persons with chronic disease", *American Journal of Clinical Nutrition*, Vol. 90 No. 5, pp. 1351-1357.

Lewis, R., Menardi, C., Yoxall, A. and Langley, J. (2007), "Finger friction: Grip and opening packaging", *Wear*, Vol. 263, pp.1124-1132.

Liamputtong P. (2007), *Researching the vulnerable: A guide to sensitive research methods*, Sage, London.

Lifecourse Associates (2012), *Generations in History*, available at: [http://www.lifecourse.com/assets/files/gens_in_history\(1\).pdf](http://www.lifecourse.com/assets/files/gens_in_history(1).pdf) (accessed 18 November 2012).

Madriz, E. I. (1998), "Using focus groups with lower socioeconomic status Latina women", *Qualitative Inquiry*, Vol. 4 No. 1, pp. 114-128.

Milner, L. and Higgs, B. (2004), "Gender sex role portrayals in international television advertising over time: the Australian experience", *Journal of Current Issues and Research in Advertising*, Vol. 26 No. 2, pp. 81-95.

Montepare, J.M. and Zebrowitz, L.A. (1998), Person perception comes of age: The salience and significance of age in social judgments", in Zanna, M.P. (Ed.) *Advances in Experimental Social Psychology*, Academic Press, San Diego, CA, pp. 93-161.

Morse, J. (2006), "Strategies of Intraproject Sampling", in Munhall, P. L. (Ed.), *Nursing Research: A Qualitative Perspective*, Jones and Bartlett Publishers, Sudbury, MA, pp. 529-540.

Moschis, G.P. (1992), *Marketing to older consumers: A handbook of information for strategy development*, Quorum, Westport, CT.

Mueller Loose, S. and Szolnoki, G. (2012), "Market price differentials for food packaging characteristics", *Food Quality and Preference*, Vol. 25, pp. 171-182.

Mumel, D. and Prodnik, J. (2005), "Grey consumers are all the same, they even dress the same: myth or reality?", *Journal of Fashion Marketing and Management*, Vol. 9 No. 4, pp. 434-49.

National Literacy Trust (2012), "How many illiterate adults are there in England?", available at: http://www.literacytrust.org.uk/adult_literacy/illiterate_adults_in_england (accessed 11 June 2013).

Nielsen (2012), "Don't Ignore Boomers – The Most Valuable Generation", August 6 2012, available at: <http://blog.nielsen.com/nielsenwire/consumer/don%E2%80%99t-ignore-boomers-%E2%80%93-the-most-valuable-generation/> (accessed 9 August 2012).

Niemelä-Nyrhinen, J. (2007), "Baby boom consumers and technology: shooting down stereotypes", *Journal of Consumer Marketing*, Vol. 24 No. 5, pp. 305-12.

Nijssen, E. J. (1999), "Success factors of line extensions of fast-moving consumer goods", *European Journal of Marketing*, Vol. 33 No. 5-6, pp. 450-469.

Nicholl, H. (2010), "diaries as a method of data collection in research", *Paediatric Nursing*, Vol. 22 No. 7, available at: <http://nursingchildrenandyoungpeople.rcnpublishing.co.uk/archive/article-diaries-as-a-method-of-data-collection-in-research> (accessed 30 May 2013).

Nørgaard, M. K. and Brunso, K. (2009), "Families' use of nutritional information on food labels", *Food Quality and Preference*, Vol. 20 No. 8, pp. 597-606.

OECD (2012), "Health at a Glance: Europe 2012", available at: http://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2012/life-expectancy-and-healthy-life-expectancy-at-age-65_9789264183896-5-en (accessed 18 November 2012).

Office for National Statistics (2011), "Family spending survey", available at: <http://www.ons.gov.uk/ons/rel/family-spending/family-spending/family-spending-2011-edition/index.html> (accessed 4 March 2012).

Ong, F. S., Kitchen, P. J. and Jama, A. T. (2008), "Consumption patterns and silver marketing: an analysis of older consumers in Malaysia", *Marketing Intelligence & Planning*, Vol. 26 No.7, pp. 682 – 698.

Oostendorp, J. A., Bode, J. M., Lutters, E., and van Houten, F. (2006), "The (development) life cycle for packaging and the relation to product design", *Paper presented at the 13th CIRP International conference on life cycle engineering, May 31st – June 2nd, Leuven*. Available at: <http://www.eugris.info/displayresource.aspx?r=6436> (accessed 19 August 2012).

Ozanne, J. L., Adkins, N. R., and Sandlin, J. A. (2005), "Shopping [for] power: How adult literacy learners negotiate the marketplace", *Adult Education Quarterly*, Vol. 55 No. 4, pp. 251-268.

Ozanne, J. L. and Saatcioglu, B. (2008), "Participatory Action Research", *Journal of Consumer Research*, Vol. 35 No. 3, pp. 423-439.

Patterson, A. (2005), "Process, relationships, settings, products and consumers: The case for qualitative diary research", *Qualitative Market Research: An International Journal*, Vol. 8 No. 2, pp. 142-156.

Patton, M. (2002), *Qualitative Research and Evaluation Methods*, Sage, Thousand Oaks, CA.

Pires, C. and Agante, L. (2011), "Encouraging children to eat more healthily: The influence of packaging", *Journal of Consumer Behaviour*, Vol.10, pp. 161–168.

- Plummer, K. (2001), *Documents of life 2: An invitation to critical humanism*, Sage, London.
- Pope, C., Ziebland, S., and Mays, N. (2000), "Qualitative research in health care - Analysing qualitative data", *British Medical Journal*, Vol. 320, pp. 114-116.
- Prieler, M., Kohlbacher, F., Hagiwara, S., and Arima, A. (2011), "Gender representation of older people in Japanese television advertisements", *Sex Roles: A Journal of Research*, Vol. 1 No. 5-6, pp. 405-415.
- Pujari, D. and Wright, G. (1996), "Developing environmentally conscious product strategies: a qualitative study of selected companies in Germany and Britain", *Marketing Intelligence & Planning*, Vol. 14 No. 1 pp. 19 - 28.
- Reimann, M., Zaichkowsky J., Neuhaus C., Bender T., and Weber, B. (2010), "Aesthetic package design: A behavioural, neural, and psychological investigation", *Journal of Consumer Psychology*, Vol. 20 No. 4, pp. 431-441.
- Rettie, R. and Brewer, C. (2000), "The verbal and visual components of package design", *Journal of Product & Brand Management*, Vol. 9 No. 1, pp. 56-70.
- Riley, M. W. (1985), "Age strata in social systems", in Binstock, R. H. and Shanas, E. (Eds.), *Handbook of Aging and the Social Sciences*, Van Nostrand Reinhold, New York, NY, pp. 369-411.
- Rundh, B. (2005), "The multi-faceted dimension of packaging: Marketing logistic or marketing tool?", *British Food Journal*, Vol. 107, 670-684.
- Schewe, C. D. (1988), "Marketing to our ageing population: Responding to physiological changes", *Journal of Consumer Marketing*, Vol. 5, pp. 61-73.
- Schoberberger R., Klik K., Korab T., and Kunze M. (2007), "The influence of drug packaging on the drug-taking compliance of older patients living on their own", *Wien Med Wochenschr*, Vol. 157 No. 11-12, pp. 271-278.
- Seccombe, K., and Ishii-Kuntz, M. (1991), "Perceptions of problems associated with ageing: Comparisons among four older age cohorts", *The Gerontologist*, Vol.31, pp. 527-533.
- Sharfa, M., Selaa, R., Zentnera, G. Shooba, H., Shaib, I. and Stein-Zamira, C. (2012), "Figuring out food labels. Young adults' understanding of nutritional information presented on food labels is inadequate", *Appetite*, Vol. 58 No. 2, pp. 531-534.
- Sherman, S. R. (1994), "Changes in age identity: Self-perceptions in middle and late life", *Journal of Ageing Studies*, Vol. 8, pp. 397-412.
- Simcock, P. and Sudbury, L. (2006), "The invisible majority? Older models in UK television advertising", *International Journal of Advertising*, Vol. 25 No. 1, pp. 87-106.
- Sirgy, M. J., Samli, A. C. and Meadow, H. L. (1982), "The interface between quality of life and marketing: A theoretical framework", *Journal of Marketing & Public Policy*, Vol. 1, pp. 69-84.

- Sogn-Grudvåg, G. and Østl, J. (2009), "Consumer evaluation of unbranded and unlabelled food products: The case of bacalhau", *European Journal of Marketing*, Vol. 43 No. 1, pp. 213-228.
- Stephens, N. (1991), "Cognitive Age: A Useful Concept for Advertising?," *Journal of Advertising*, Vol. 20 No. 4, pp. 37-48.
- Sudbury, L. (2004), "Subjective age perceptions in the UK: An empirical study", *Quality in Aging and Older Adults*, Vol. 5 No. 1, pp. 4-13.
- Sudbury, L. and Simcock, P. (2009), "Understanding older consumers through cognitive age and the list of values: A U.K.-based perspective," *Psychology & Marketing*, Vol. 26 No. 1, pp. 22-38.
- Teddlie, C. and Yu, F. (2007), "Mixed method sampling: A typology with examples", *Journal of Mixed Methods Research*, Vol. 1 No. 1, pp. 77-100.
- Thompson, J. and Thompson, K. E. (2009), "Can marketing practice keep up with Europe's ageing population?," *European Journal of Marketing*, Vol. 43 No. 11, pp. 1281-1288.
- Thompson, K. E. and Thompson, N. S. (2007), "Advertising to older consumers: Theory into practice", Paper presented at the Academy of Marketing Conference, July, Kingston University.
- Thompson, P., Itzin, C. and Abendstern, M. (1990), *I don't feel old: Understanding the experience of later life*, Oxford University Press, London.
- Umaña-Taylor, A. J. and Bámaca, M. Y. (2004), "Conducting focus groups with Latino populations: Lessons from the field", *Family Relations*, Vol. 53, pp. 261-272.
- Underwood, R. L. (2003), "The Communicative Power of Product Packaging: Creating Brand Identity via Lived and Mediated Experience", *Journal of Marketing Theory and Practice*, Vol. 11 No. 1, pp. 62-76.
- UNESCO (2012), "Adult and youth literacy", available at: <http://www.uis.unesco.org/FactSheets/Documents/fs20-literacy-day-2012-en-v3.pdf> (accessed 11 June 2013).
- United Nations (2010), "World Population Prospects 2010 Revision", available at: http://esa.un.org/wpp/Sorting-Tables/tab-sorting_ageing.htm (accessed 10 August 2012).
- Urry, H. L. and Gross, J. J. (2010), "Emotion regulation in older age", *Current Directions in Psychological Science*, Vol. 19 No. 6, pp. 352-357.
- US Census Bureau. (2011), "The International Database", available at: <http://www.census.gov/population/international/data/idb/informationGateway.php> (accessed 12 March 2011).
- US Department of Education (2013), National Institute of Literacy, available at: <http://www.statisticbrain.com/number-of-american-adults-who-cant-read/> (accessed 11 June 2013).
- van Trijp, H. C. M. (2009), "Consumer understanding and nutritional communication: Key issues in the context of the new EU legislation", *European Journal of Nutrition*, Vol. 48, No. 1, pp. 41-48.

Vuori, S. and Holmlund-Rytkönen, M. (2005), "55+ people as internet users", *Marketing Intelligence & Planning*, Vol. 23 No. 1, pp. 58 – 76.

Vogel, D., Toffel, M., Post, D. and Uludere, N. (2010), "Environmental Federalism in the European Union and the United States", Working Paper 10-085, Harvard Business School, 17 March.

Walsh, G. and Mitchell, V. W. (2005), "Demographic characteristics of consumers who find it difficult to decide", *Marketing Intelligence & Planning*, Vol. 23 No. 3 pp. 281 – 295.

Ward J., Buckle P. and Clarkson, P. J. (2010), "Designing packaging to support the safe use of medicines at home", *Applied Ergonomics*, Vol. 41 No. 5, pp. 682-694.

Wells L. E., Farley H. and Armstrong, G. A. (2007), "The importance of packaging design for own-label food brands", *International Journal of Retail and Distribution Management*, Vol. 35, pp. 677- 690.

Westerman, S. J., Sutherland, E. J., Gardner, P. H., Baig, N., Critchley, C., Hickey, C., Mehigan, S., Solway, A., and Zervos, Z. (2013), "The design of consumer packaging: Effects of manipulations of shape, orientation, and alignment of graphical forms on consumers' assessments", *Food Quality & Preference*, Vol. 27 No. 1, pp. 8-17.

Wogalter, M. S. and Vigilante, W. J. (2003), Effects of label format on knowledge acquisition and perceived readability by younger and older adults", *Ergonomics*, Vol. 46 No. 4, pp. 327-344.

Yoxall, A., Langley, J., Musslewhite, C., Rodriguez-Falcon, E. M. and Rowson, J. (2010a), "Husband, daughter, son and postman, hot-water, knife and towel: Assistive strategies for jar opening", *Designing Inclusive Interactions*, Vol. IV: 187-196.

Yoxall, A., Langley, J., Janson, R., Lewis, R., Wearn, J., Hayes, S. A. and Bix, L. (2010b), "How wide do you want the jar?: The effect on diameter for ease of opening for wide-mouth closures", *Packaging Technology and Science*, Vol. 23, pp. 11-18.

