

# Using Eye Tracking to Understand Consumer Behaviour in Garden Centres<sup>©</sup>

Stella Minahan and Stuart Orr

Deakin Graduate School of Business, Faculty of Business and Law, 70 Elgar Road  
Burwood Victoria 3125, Australia

Bridget Behe, R. Thomas Fernandez and Lynnell Sage

Department of Horticulture, College of Agriculture & Natural Resources, Michigan State  
University, 1066 Bogue St., East Lansing, Michigan 48824, USA

Patrica Huddleston

Department of Advertising, Public Relations and Retailing, College of Communication  
Arts & Sciences, Michigan State University, 404 Wilson Rd., East Lansing, Michigan  
48824, USA

Email: stella.minahan@deakin.edu.au

## BACKGROUND

The Nursery and Garden Industry of Victoria (NGIV) with an international team of horticulture and retail researchers have been using eye tracking technology in stores to evaluate consumer reaction to point of purchase displays and signage. Eye technology captures exactly what the customer looks at and these data can be downloaded and analysed.

For example:

- What first catches the attention of a customer?
- How long does that element hold their attention?
- How many gazes does it attract?
- What area gets the most attention?

This information can be directly related to customer demographics, expressed preference and sales data. The research can provide information to plant producers and garden centres with evidence of what the customer looks at, what factors determine the decision and what they ultimately buy. This research aims to provide the nursery supply chain with unique information on customer behaviour leading to improvements in the shopping experience and enhancing profitable sales.

From a marketing standpoint, observing where people look is not a new concept. Nixon (1924) hid behind a curtain and first observed consumers' eye movements as they viewed magazine advertisements. Today, the gap in relating a purchase to stimuli viewed is closing (Pieters and Warlop, 1999; Russo and Leclerc, 1994) faster than when Triestman and Gregg (1979) first documented. Eye tracking hardware and software allow direct robust measurement of eye movements to assess that link. The majority of eye-tracking literature is related to the act of reading (Rayner, 1998, for example package labels Bix et al., 2009) and more traditional printed materials (Leven, 1991). Recently, eye-tracking studies have expanded to evaluate consumer perceptions and liking of outdoor advertisements (Maughan et al., 2007).

Merchandising displays are ubiquitous in retail settings. Producers and garden centres rely on displays to be silent salespeople, to draw consumers into the store and motivate them to touch, evaluate, and purchase products. Displays have the capacity to increase sales, for example Norfalt (2011) found that disorganised displays, which signal cheaper merchandise, can increase sales by over 900%. Thus, increasing our understanding of how consumers view and react to merchandise displays has both academic and practitioner relevance. The affordability and portability of eye-tracking hardware and software, along with the dearth of information about attention capturing stimuli in merchandise displays, make the time ripe for discovery about visually captivating elements of displays to the benefit of academia and industry.

Several studies have investigated consumer attention to discrete elements of the

environment, such as shelf facings and brands (Chandon et al., 2009) and mall media (Smith-Thomas, 2011). Virtually no holistic investigations of products in the retail setting have been published. Our goal is to provide qualitative and quantitative information to producers and garden centres to help them create more effective displays.

Visual cognitive processing requires the eyes to attend to an object, and attention requires eye movement (Russo, 1978). Eye movement is the fastest movement the human body can make (Holmqvist et al., 2011), consisting of a series of stops (fixations) and moves (saccades). Eye fixations direct attention and attention increases mental processing of the meaning of the object (e.g., word, image, or other stimulus). Characteristics about the person (top down factors) and about the stimulus (bottom up factors) contribute to attention and, thus, both have an impact on meaning derived from the stimulus. More is understood about top-down factors than bottom-up factors (Wedel and Pieters, 2008). The bottom-up factors (mode, objective, and features) or stimuli attributes and their role in capturing attention are only now becoming the subject of investigations due to improved affordability and compactness of eye-tracking hardware (Chandon et al., 2009).

The bulk of the peer-reviewed studies using eye-tracking investigated the process of reading by following eye movements (see Rayner 1998, for a 20 year review of this subject). In consumer research, the peer-reviewed studies are sparse (see Wedel and Pieters, 2008, for the most comprehensive consumer research review) and nearly all are investigations of attention capture in print or electronic media. They reported that Leven (1991) demonstrated a preferred scan path (the map of a combination of saccades and fixations over a stimulus) to create meaning from advertising images. This is because a person's attention selects a specific area on which the eyes focus and the brain enhances processing of that object. Complex information demands a longer fixation duration to more fully understand, when compared to relatively simple information (Wedel and Pieters, 2000). Kuisma et al. (2010) found that animation in online advertisements drew more of the viewers' attention for vertical advertisements compared to horizontal advertisements. Meisner and Decker (2010) demonstrated that consumers spent more time (eye fixations) viewing product attributes that were more important to them.

Maughan et al. (2007) found a correlation between eye fixations and "liking" of an advertisement. However the relationship between time spent looking and consumer decision making is not yet firmly established. For example, Patalano et al. (2009) documented that consumer indecisiveness was related to time spent viewing information about the purchase as well as time spent looking away from information directly related to that choice task.

Eye tracking has been used to analyse some other marketing stimuli, such as packaging but is still largely related to reading. For example, Teixeira et al. (2010) branded products received more viewer attention compared to unbranded products, regardless of product size. Bix (2009) investigated the prominence of package warnings on OTC medicines and showed they were not readily viewed. Sorensen et al. (2012) showed that product name on a label attracted the most attention, six times greater than any claim on organic production. They further showed that illustrations captured more attention than health claims, even if the illustration had nothing to do with the product. Meisner and Decker (2010) showed that consumers spent more time (eye fixation) on product attributes that were more important to them in a conjoint study. Eye tracking software will be used to develop new food labels for European products (Bonsmann et al., 2010).

Eye tracking research has begun to focus on evaluation of point of purchase marketing. Chandon et al. (2009) explored the influence of number and position of shelf facings on consumer attention and evaluation of display shelves. The effectiveness of mall media in capturing attention was investigated by Smith-Thomas (2011). For research on merchandise displays in situ, researchers reported that, "Despite the typically large and hence promising sales effects of special display studies, the area is not particularly well marked out (Chevalier, 1975). For instance, special displays are assumed to be a powerful tool to capture the customers' attention. Yet, this aspect is very little elaborated on in academic studies" (Nordfalt, 2011, p.169). He postulated that learning more about

capturing attention is of “great academic and practical interest” and went on to show with eye-tracking hardware that electronic signs, indeed, did capture more consumer attention. Understanding the impact of point of purchase marketing is critical, as 68% of buying decisions are unplanned (Stahlberg and Maila, 2010). Effective displays and other marketing materials present an opportunity to capture consumer attention and share of wallet.

The emerging body of peer-review eye-tracking literature has more studies related to the act of reading (e.g., advertisement assessment or package labels) than viewing merchandise displays in store. Wedel and Peters (2008, p.143) call for more research on “other static visual marketing stimuli besides print ads”. Given the void in the literature for field research on displays and the emergence of affordable, portable eye-tracking hardware and software, there is an ideal opportunity to investigate what captures attention in displays that, as Nordfalt expressed would be of “great academic and practical interest. We seek to expand on previous research by using portable eye-tracking hardware to assess merchandised products in displays with signage. We see this effort as an equally important use of the technology to better measure bottom-up factors that literally catch consumers’ attention and improves the shopping experience and results in a greater probability of purchase.

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