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Anti-Clockwise Or Clockwise? the Impact of Store Layout on the Process of Orientation in a Discount Store

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The object of this paper is to investigate the concept of mental maps as a basis for explaining the ease of orientation experienced by consumers at the point of sale. Useful hypotheses explaining the formation of mental maps can be derived from environmental psychology and neurophysiology. The empirical studies reported here—a pointing task and a simulated shopping task—were conducted in two discount grocery shops with identical assortments and prices, one guiding customers in a clockwise direction and the other in an anti-clockwise direction. Using a geographical information system (GIS), we found that the direction in which shoppers were guided, as well as the location of products (in peripheral aisles versus the interior section of the shop) influenced the formation of accurate mental maps, the ease of orientation, and the efficiency of the shopping process.

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Anti-Clockwise or Clockwise? The Impact of Store Layout on the Process of Orientation in a Discount Store

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EXTENDED ABSTRACT

More and more consumers are not making their buying decisions until they are at the point-of-sale (POS). There, they are inspired by the store design and presentation of products on the shelves. One of the key factors influencing buying behaviour at the POS is consumer orientation, since they can only buy those items they are able to find. In this article we examine the process of customer orientation in retail stores and focus on the impact of the store layout (anti-clockwise or clockwise) on their ability to find products and orientate themselves at the POS. Several empirical studies of store environments (Groeppel-Klein 2001; Groeppel-Klein and Germelmann 2003; Grossbart and Rammohan 1981; Sommer and Aitkens 1982) show evidence of a significant correlation between the existence of maps of shops (knowledge of product location, assortments, service points, escalators, etc.) and sentiments regarding the convenience of shopping.

The theoretical background to orientation can be found in the studies of environmental psychology and neurophysiology. The cognitive approach of environmental psychology tries to determine how individuals perceive and remember environments. The basis for this ability is cognitive (or mental) maps stored in consumers' memories. How exactly left and right hemispheres interact in solving spatial task has not yet been fully resolved (Kukolja, Marshall, and Fink 2006) but neurological research suggests the value of further analysing the relevance of cognitive maps. In the current study we investigate some of the ways practitioners believe mental maps can be improved and the ease of orientation enhanced in retail environments.

Research into consumer behaviour has paid little attention in the past to product location in consumers' mental maps as a success factor in retailing. One notable exception is a study by Sommer and Aitkens (1982) in which participants had to locate eleven different products on a store map (as a measure of how detailed shoppers' mental maps were). To extend the results of Sommer and Aitkens' study, we used a geographical information system (which analyses the location of products as indicated on a store map by test participants using a computer program) and integrated moderating variables (guidance direction, right- or left-handedness of the shoppers) and tested the relationship between the accuracy of the mental maps and perceived ease of orientation.

Most shops guide customers through the store in an anti-clockwise direction. This is generally justified by the fact that costumers are for the most part right-handed (Underhill 2000, 76). However, neurophysiological research suggests a different explanation for this turning preference—the hormone dopamine, which is responsible for locomotion in space. The higher the dopamine concentration on the left side of the brain, the more consumers' attention (and consequently their locomotion) is focused on the right side (Mead and Hampson, 1996; Mohr et al. 2004). In a clockwise-orientated shop, customers will therefore frequently glance at the shop's interior. It has further been suggested that shoppers also have a general orientation towards the walls because of security reasons of the shops as this makes them feel secure (Appleton 1986); this leads them to notice products on the left-hand side of aisles. Taken together, these two tendencies enable customers to remember more products in a shop with a clockwise layout, which in turn gives them a more positive attitude toward the shop.

By contrast, in a store with an anti-clockwise layout, both tendencies concentrate on the right-hand side. This leads us to our first hypothesis (H1): If shoppers are guided in a clockwise direction, they will have a more detailed mental map, evaluate the shop more positively, and be willing to spend more money than if they are guided in an anti-clockwise direction. The first part of our second hypothesis (H2a) re-investigates the central result of Sommer and Aitkens (1982): Irrespective of the guiding direction (clockwise or anticlockwise), customers will recall products located in peripheral aisles better than those in central aisles. The second part of the second hypothesis (H2b) tests, as discussed above, whether a more detailed mental map leads to a more positive evaluation of the ease of orientation and value for money.

We conducted our empirical studies in two shops belonging to a discount grocery chain. Both shops were identical in terms of assortment and prices. However, in one customers were guided clockwise around the store and in the other anti-clockwise. Before entering the shop, subjects in the first study ($n=196$) had to locate eight specific products on central and peripheral aisles on a store map. The results provide support for H1: subjects in the store with the clockwise layout had a more detailed mental map and evaluated the store better in terms of perceived ease of orientation and value for money. Additionally, they spent more money in the store. In both stores, products on the peripheral aisles were located with a significantly higher level of accuracy than products on the central aisles (supporting H2a). As we had assumed, there was a significant correlation between having a detailed mental map and the ease of orientation/perceived value for money (supporting H2b).

To validate our findings about the relevance of turning bias and the accuracy of mental maps we conducted a second study with a given shopping task. In this study, we looked at shoppers' travel and search patterns (Titus and Everett 1995; Larson, Bradlow, and Fader 2005). If the clockwise layout is really superior to the anti-clockwise layout then shoppers should take shorter distances to find the products in such a setup. This leads us to our third hypothesis (H3): In a clockwise store layout, significantly more consumers will belong to the group of "efficient shoppers" (in terms of distance and/or time) than in an anti-clockwise layout. In our second study, test participants ($n=76$, shopping frequency and store patronage were controlled for) were asked to shop eight specific products. Two disguised observers kept track of the walking behaviour of the subjects. As in the first study, we used a GIS to process our data and to test our hypothesis. After a standardisation of the distance covered by test participants we split subjects up into two groups: "short-distance shoppers" and "long-distance shoppers". The results show that there were significantly more shoppers who covered a short distance for the shopping task in the store with the clockwise layout than in the store with the anti-clockwise layout. A questionnaire completed after the shopping task showed relevant differences in the characterisation of the two groups of shoppers: this related to the accuracy of the mental map, time spent, enquiries made of shop assistants, the perceived ease of the task, and the willingness to spend money.

In summary, the results of our two empirical studies show that embedding spatial information (i.e. knowledge of the location of products) in the shopper's mind is a key factor for retailing success. The result for both studies reveals that guiding direction and

product location are responsible for improving mental maps and shopping efficiency.

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