Perception Research and Its Significance for Retail Marketing and Shopper Research

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Andrea Gröppel-Klein

Abstract

Every person lives in his or her own world of perception. Normally, when shopping in a department store, consumers do not consciously perceive all the thousands of items available there, but concentrate on a selection and put together their own shopping basket, which differ from those of other customers, quite individually. This is a consequence of their perception. Perception is a subjective, selective and constructive process. In the context of this paper, we will first explain the concept of perception and point out that perception is usually a complex interaction of different sensory organs, whereby the individual ultimately attempts to form a cognitive representation of the environment (e.g., a shopping place). Visual perception is particularly relevant here. In addition to conscious perception unconscious perception at the point-of-sale (POS) plays a crucial role. Background music at the POS, for example, is often only experienced subconsciously, but it can influence our behavior. Perception is always contextual, the context can influence how we perceive the environment. For example, many consumers will probably perceive and subsequently buy freshly baked bread if a corresponding scent can be smelled at the POS. The context, in turn, can be designed accordingly. This article discusses the relevance of perception research for explaining consumer behavior at the POS as well as practical conclusions for (retail) marketing.

A. Gröppel-Klein (✉)
Institut für Konsum- und Verhaltensforschung, Universität des Saarlandes, Saarbrücken, Germany
e-mail: groeppel-klein@ikv.uni-saarland.de

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3.1 Understanding of Terms

Perception is a process of information processing through which both received environmental stimuli and internal signals are decoded (Kroeber-Riel and Gröppel-Klein 2019, p. 304). Perception is referred to as a classical sub-discipline in general psychology, along with emotion, motivation, learning, memory, and thinking (Prinz et al. 2017, p. 9). Yet, within this sub-discipline, it is necessary to deal with different aspects of perception; for these show, on the one hand, how complex perceptual processes can be and, on the other hand, how interwoven they are with the other psychological sub-disciplines. Thus, the question must be asked whether perception and attention are closely intertwined, that is, whether only those stimuli can be decoded to which our attention is directed. Here, the interlocking of cognitive perception with the affective processes of emotion and motivation also becomes apparent: Thus, it is reasonable to assume that we preferentially perceive those stimuli that satisfy our motivations. If we are thirsty, we will focus our attention primarily on drinks and thus perceive drinks predominantly. But do we not also have unconscious needs that lead to unconscious perceptual processes? This leads to the follow-up questions of whether conscious perception always occurs or whether unconscious perception is also possible, i.e., we unconsciously process stimuli to which our attention is not directed. The measurement of unconscious processes is not trivial; ultimately, it is assumed that unconscious perception has taken place when changes in experience or behavior occur after exposure to stimuli that cannot be perceived consciously. A typical example is the experiment conducted in different variants (Brown 2006), in which job seekers from the advertising industry are driven by taxi from the train station through a city to their potential employer, past houses and shops.

> "Some pass a zoo in the process, others don't. Once at the advertising agency, the applicant is instructed to develop an advertising campaign for a furniture manufacturer that is supposed to exude comfort. In many cases, applicants who have passed a zoo during the taxi ride (unlike the other applicants) are then found to have a purring cat or a sleeping dog on the upholstered furniture, even if the applicants did not remember passing the zoo because their minds were entirely on the job interview." (Kroeber-Riel and Gröppel-Klein 2019, p. 308)

Finally, we need to ask whether perception differs depending on the sensory organ, which sensory organs are dominant, and whether and how the individual sensory organs influence each other. For example, if beef tastes like meat but its texture is creamy, does this mismatched sensory experience change our impression of the product? Can we even identify it as beef if there are conflicting taste and texture experiences that do not match what is stored in memory for the product?

In relation to visual perception, for example, we need to ask whether certain stimuli trigger quasi-automatic bottom-up processing that takes place independently of other cognitive functions (e.g., memory), or whether the information stored in our memory guides our perception and thus top-down processing can occur (Müsseler 2017, p. 15). Such questions often have very practical implications. For example, consider a consumer who wants to buy his favorite jam in a grocery store. Does he scan the shelf with his gaze, so to speak, and stop where the logo of his preferred brand appears? Then a comparison would take

place at the POS between the perceptual image and the memory image of the brand, i.e., a memory-based perception would take place. It is also conceivable, however, that the consumer is captivated by an unusual stimulus, e.g., by a very unusual product design, which leads to the customer only paying attention to this stimulus. Similarly, the store layout or other in-store tools can influence perception. The field of shopper research deals with such questions of researching consumer behavior at the POS.

Finally, perceptual illusions can also occur. This refers to erroneous perceptions that result from the misinterpretation of sensory messages: For example, products are perceived to be larger or smaller than they actually are. This topic is often discussed in the context of consumer protection.

All in all, processes of perception are highly complex and can only be presented in the context of a short contribution to an anthology in an overview-like, selective and subjective manner from the author's point of view. This contribution expressly excludes completeness. Consequences for consumer behavior and (retail) marketing can also only be discussed on the basis of selected examples.

3.2 Properties of Perception

Humans have various sensory organs at their disposal, which should help them to obtain an image of the environment (see Fig. 3.1).

Often the illusion is conveyed that we can perceive this environment "objectively." However, this is not possible: On the one hand, there are physical environmental stimuli that we cannot perceive at all, even if we wanted to (e.g., radio waves), because our sensory organs lack the corresponding capabilities (Hagendorf et al. 2011, p. 14). On the other hand, the sensory organs have only a limited capacity even for perceptible stimuli, i.e., from the multitude of available stimuli, we only (consciously) perceive a small part. Perception is a system of coping with our environment. Perception is therefore always selective: From the unmanageable amount of stimuli acting on our sense organs, only a small part is selected (Kroeber-Riel and Gröppel-Klein 2019, p. 306), otherwise the human information processing system would be overwhelmed. Which stimuli are selected

Object area	sensory modalities	cognitive processes
e.g. 		
Items Operations Relationships	View Listen Keys Taste Smell Sentiment	Interpretation of the sensory impressions

Fig. 3.1 Scheme of perception. (Source: Kroeber-Riel and Gröppel-Klein 2019, p. 304)

depends on the reactive or consciously controlled forms or on the previous experiences, desires and needs of the individuals. Everyone therefore lives in his or her own subjectively perceived world, which may differ to a greater or lesser extent from the personal world of others. Perception is thus usually not just a passive reception of stimulus impressions, but an active process through which individuals construct their own subjective environment and is closely linked to attention. Attention can be understood as the short-term heightened sensitization of the organism that ensures that significant stimuli are taken in and irrelevant stimuli are inhibited. This includes all "cognitive and neuronal mechanisms of selecting a defined amount of information from a large amount of visual, auditory, tactile, olfactory, etc. stimuli that is necessary for efficient and trouble-free action control" (Krummenacher and Müller 2017, p. 145). Activation can be triggered by both internal (e.g., metabolic processes, mental activities) and external stimuli.

However, it should already be emphasized at this point that unconscious perception can also occur, i.e., we can perceive stimuli to which our attention is not directed. Example: We are at the POS urgently searching for detergent. Consequently, our attention is completely focused on finding detergent, all "non-detergent stimuli" at the POS are filtered out by us as irrelevant. However, we may still unconsciously register other products, such as dishwashing detergent, and therefore have an idea of where these products are located at the end of the shopping trip, even though our attention was not directed to these items. The nature and consequences of unconscious perception will be discussed in more detail later. However, casual perception can be transformed into conscious perception. Even if we do not have the goal of buying dishwashing detergent, for example, an activating display can draw our attention to this product and distract us from buying detergent in the short term.

At this point, we can mention two fallacies that practical retail marketing might succumb to base on these findings. One misconception could be the intention to draw attention to as many products as possible through an extremely high number of activating stimuli. However, this could lead to a stimulus overload at the POS, which would be counterproductive, since the conscious perceptual capacities are limited and the consumer would thus be overwhelmed. A second possibility of misdirection would be to lead consumers alongside as many other goods as possible on the way to products that are particularly relevant for purchase (which, for example, are on the shopping list of many customers), in order to exploit the capacity of casual perception and to confront consumers unconsciously with these offers. However, the old retail rule of "lead consumers to the farthest corners of your store by presenting the freshest everyday items there, thus connecting them with as many goods as possible" proves to be a poor guide, as consumers go shopping not only with a money budget, but also with a time budget. If time is wasted with detours or tiresome searching, less rather than more will be purchased (Gröppel-Klein and Bartmann 2009). A high degree of orientation friendliness at the POS, which is oriented towards the cognitive structures of the consumer (e.g., also by presenting products that have a close usage connection, such as coffee and filter bags, in spatial proximity and not in two different departments – food and non-food), goes hand in hand with improved perception, in the sense that consumers perceive and remember more product locations. This ultimately leads to high customer satisfaction.

Basically, it should be noted at this point that for shopper research the importance of subjectivity and selectivity of perception cannot be emphasized enough, because it is not the objective offer that determines consumer behavior, but the subjectively perceived offer. It is not enough for the retailer to offer "objectively" good services (e.g., variety of the assortment). It must also be ensured that these services are perceived accordingly.

3.3 Basic Findings and Instruments for Controlling Perception

3.3.1 Conscious Perception

The sensory impressions triggered by the environmental stimuli (for example, from a display) are initially stored in the sensory register. This is only a passive and very short storage. Attention brings the stimuli to consciousness and selects the perception, thereby providing the cognitive processing capacity with a stimulus. From activation research (Kroeber-Riel and Gröppel-Klein 2019, p. 78), it is known that the following stimuli trigger attention: (a) affective stimuli (especially key stimuli, e.g., child schema, nature, eroticism), which, incidentally, can be perceived not only visually but also tactilely or olfactorily (e.g., fresh cake scent); (b) collative stimuli (e.g., novel or surprise stimuli such as mannequins that appear and act alive); and (c) intense stimuli (act through their physical properties and trigger reflexive orientation responses, e.g., striking colors). Fragrances and music (the effects of which will be outlined below) can be counted among affective stimuli (if they trigger feelings) but can also be counted among intense stimuli – if they are intense enough. Attention (Kroeber-Riel and Gröppel-Klein 2019, p. 62) is usually accompanied by an orientation response, i.e., turning toward the stimulus (e.g., turning the head, pupil dilation). The sensory impressions thus received and selected are decoded in the working memory and processed with the aid of the knowledge stored in the long-term memory. For example, a certain word must be recognized as a brand name. As already mentioned, perception also includes the decoding of internal stimuli, e.g., the perception of the stomach rumbling as hunger. Only through this decoding do the received stimuli become information for the receiver.

The subjective interpretation of stimuli also includes their evaluation; this is done by relating them to one's own emotions and motives/motivations (Kroeber-Riel and Gröppel-Klein 2019, p. 306), e.g., product A quenches thirst better than B; brand A is cheaper than B. When a consumer seeks information to achieve consciously pursued goals (e.g., shopping for a good price), he or she willfully turns his or her attention to stimuli that he or she assumes will contribute to goal realization (e.g., price promotions at the POS). Irrelevant stimuli, i.e., stimuli that do not address existing goals or needs, are disadvantaged in perception. The same applies to unattractive stimuli: Stoll et al. (2008), for example, showed by means of an fMRI study that attractive product packaging, in contrast to non-attractive packaging, leads to increased activity in those brain areas that are responsible for visual attention and processing. Similarly, the perception of brands at the POS is facilitated if the

promotional stimuli shown there with the brand names trigger memory effects by reactivating stored brand worlds. If displays at the POS show key images of previously communicated advertising campaigns, then the effect (e.g., clarity of the inner image of the brand, attitude and subsequent purchase intention) is particularly positive (Helfgen 2019).

In addition to displays, store design, the layout of stores and the placement of goods at the POS also play an important role in controlling perception at the POS. For example, studies by Sommer and Aitkens (1982) (replicated today, see e.g., Gröppel-Klein and Bartmann 2009) found 40 years ago that in discount stores (which usually dictate the customer flow), products in the outside aisles were remembered significantly better than products in the inside aisles (with correct recall being an indication of prior perception) and that so-called cognitive anchors (e.g., eye-catching decorations, escalators, changing rooms), i.e., visually salient stimuli, promote the perception of products and the construction of correct mental maps. Mental maps are cognitive maps that show how well an environment is represented in the consumer's memory. The better and more detailed a mental map is, the better consumers are able to find their way around the real environment (and vice versa). Support from the retail sector to build up a clear mental map of the consumer from the store is therefore particularly recommended.

Various experiments conducted by the IKV (Institute for Consumer and Behavioural Research) in recent years prove that customer guidance through the store in particular plays a role in the perception of products and the construction of mental maps. Basically, customers can be guided "clockwise" ("left-handed") or "counter-clockwise" ("right-handed") through the store. Gröppel-Klein and Bartmann (2009) and Gröppel-Klein and Helfgen (2016) provide evidence that the "counter-clockwise layout," which is predominant in Germany, is inferior to the "clockwise layout." When consumers were guided clockwise through the store, they had significantly better mental maps; the distances and times they needed to search for given products were significantly shorter than when they went "left-handed." These results were found for different retail operation types as well as for first-time and after multiple visits to the shopping location. Gröppel-Klein (2019) explains this result as follows:

> This is probably due to two innate behavioral tendencies: In (right-handed) consumers, due to an increased concentration of dopamine in the left hemisphere of the brain, there is a "turning bias to the right" (i.e., away from the left hemisphere of the brain), which leads right-handed people to automatically turn more towards the products to their right in a store. Moreover, consumers also have an inevitable wall orientation, i.e., they move towards walls in rooms, as social psychological experiments have repeatedly confirmed for decades. (…) Taken together, a "clockwise layout" thus promotes a stronger perception of products located to the right and left (on the wall), at least in the exterior aisles, while a "counter-clockwise layout", due to the wall orientation and the right-hand twist, directs the customer's gaze only to the products located on the right – and thus to potentially fewer product contacts.

Thus, with a clockwise layout, consumers notice more products as they look at the shelves both to their left and to their right.

The perception of products also depends on the way they are placed on the shelf. Not surprisingly, products at eye level are perceived preferentially (e.g., Pizzi and Scarpi 2016). Studies by Valenzuela et al. (2013) and Valenzuela and Raghubir (2015) also show that consumers assume that retailers arrange products according to certain criteria or rules. For example, popular products would be placed in the middle of the shelf, expensive products on the top shelves, while special offers would be presented at the end cap of a store aisle. The type of placement can therefore also have an effect on the evaluation of product attributes. For example, if one has to bend down to take a certain product from the shelf, this is attributed to lower quality (Valenzuela and Raghubir 2015) or a lower price (Cai et al. 2012).

The "reaching out" for products on the upper shelves and subsequent "appreciation" of these products could also be explained from the perspective of embodiment research. This assumes that "there is an interaction between cognition, sensory and motor functions" (Stangl 2019). Thus, thinking is not possible independently of the body. Dislikes and affections, for example, can be expressed in body posture, but in the same way body posture can also influence cognitive associations. However, it would go too far here to list the findings on embodiment for consumer behavior; for a summary see Kroeber-Riel and Gröppel-Klein (2019, p. 381).

Finally, behavioral economics (which is more oriented towards economics) also deals with the question of whether and how the placement of products on the shelf exerts an influence, e.g., on the selection of products, and these findings can be used for nudging. A "nudge" is understood as a "poking in the ribs" (Thaler and Sunstein 2013, p. 13), which is intended to lead to others being made aware of something, reminded of something or warned of something, in order to ultimately make "better" decisions or promote the common good. "A nudge (…) is any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler and Sunstein 2008). When fruit is presented at eye level instead of candy, the likelihood that the fruit will be perceived and thus chosen more quickly increases (Thaler and Sunstein 2013, p. 15), which can contribute to the health of the decision maker.

Fruit at eye level is again an example that concerns visual perception. In the context of this article, we focus on the sensory organ of the eye. This is where most of the research results exist. However, it should be expressly emphasized at this point that addressing the other sensory channels also plays a significant role in retail marketing. In Sect. 3.3.3, we will discuss the effect of music and scents at the POS, stimuli that are usually perceived casually. However, the importance of product tastings at the POS should also be pointed out here. Here, a very conscious perception of stimuli takes place, primarily by means of the senses of taste and smell. Empirical studies show that these POS promotion measures are cost-intensive, but are among the most effective (Nordfält and Lange 2013, p. 24). Product tastings can generate huge increases in sales. In this context, Heilman et al. (2011) dealt with the question of how attention-grabbing such promotions are, among other things, and found that about 73% of consumers who noticed the tasting at all tried the

products and that a large proportion also subsequently purchased the tasted products. Peck and Childers (2006) also show in their study, "If I touch it I have to have it," that tastings at POS often lead to impulse purchases. Thus, these sensual product experiences are also very relevant for retail marketing.

3.3.2 Measurement of Conscious Perception

Most measurement of perception is related to visual perception, although more recently more attention has been paid to the other senses. For example, researchers are addressing the questions of how auditory information processing can be measured and what problems can arise here in the case of disorders of the sense of hearing or hearing loss (e.g., Bendixen and Schröger 2017). In retail marketing, however, visual perception plays a dominant role, so in this paper we will focus on visual perception procedures.

The memory of spatial environments also represents the result of a prior conscious perception of the corresponding stimuli. Mental maps can also be determined by pointing tasks (e.g., Gröppel-Klein and Bartmann 2009). Here, consumers have to indicate the correct locations of products on a map of the store. The collection of remembered stimuli via pointing tasks is thus an indirect measurement of the perceptual processes that took place beforehand. Similarly, consumers are given search tasks at the POS, and the time taken and distance travelled to find the given products are then observed. The shorter the search times and distance, the better developed are the mental maps.

In many cases, one also tries to recreate the "course" of perception. Perception unfolds successively from an initial impression to a cognitive interpretation. In order to measure this so-called actual genesis, perceptual situations must be broken down into units and standardized. The test subjects are asked about their respective subjective perceptual impressions for each individual phase. A so-called tachistoscope is used for this purpose, with which the presentation of visual perceptual material can be limited in time and systematically varied (from a few milliseconds to continuous exposure). If the first, fleeting impression of a product is negative, for example, then there is a risk that the product will later turn out to be a flop – even if the impression may have been positive if the exposure time was long. Crystal Pepsi, for example, underwent this painful experience (despite enormously high advertising expenditure for this product). Since most consumers associate a cola drink with a typical brown color, a colorless cola drink was too extreme a deviation from the product scheme and was therefore rejected or not even identified as a cola drink at the POS when quickly scanning the shelves. This danger could have been identified, for example, with a tachistoscopic examination.

Another method for measuring perception as an information processing process is the information display matrix (IDM). Here, the consumer is supposed to select certain information that is relevant to his or her decision from an offer of information that is usually structured according to alternatives and attributes. The information is initially hidden and must be revealed one after the other. The sequence is observed or automatically recorded

(IDM versions also exist in the online area). For example, it is possible to determine which key information (e.g., price) is used, how much information is actually necessary for decision-making, whether the consumer tends to proceed attribute by attribute or alternative by alternative when making a decision, and whether choice overload problems occur (overtaxing the consumer by providing too many choice alternatives). IDM experiments can therefore be used, for example, to determine whether organic labels or other quality labels (such as fair trade labels, e.g., Aschemann-Witzel and Hamm 2011) have a decisive relevance for the perception process.

The predominant method used in recent years to measure visual information intake, and thus a prerequisite for conscious perception, is the eye-tracking method. When a consumer looks at an advertisement, a poster or a shelf, he or she may have the impression that his or her eyes capture the entire visual template with one glance. However, this subjective impression is deceptive. The gaze scans the template with fixations and irregular jumps (saccades). Information acquisition requires that during vision a clear image of the stimulus conveying the information is projected onto the fovea (the area of sharpest vision in our retina). This is not possible during fast saccades. Only when the gaze lingers briefly does a clear image of the fixated stimulus appear on the fovea. Thus, information processing only takes place during fixations (Kroeber-Riel and Gröppel-Klein 2019, p. 287).

In eye-tracking, the test subjects put on "glasses" during an experiment (which is possible both mobile at the POS and in front of a screen), to in order to register the eye movements. By means of special software, the course of the gaze, i.e., the saccades and the fixations necessary for the absorption of information, can be evaluated. Eye-tracking studies have been carried out at the POS for many years and provide information about the perception of stimuli in shops. For example, the effects of different shelf designs (Berghaus 2005) or POS promotions (Schießl and Diekmann 2007) have been investigated. It can also be analyzed whether the social context (e.g., without/with family members, friends) plays a role (Pozharliev et al. 2017), or it can be determined whether, for example, nutritional information on products (Königstorfer and Gröppel-Klein 2012) or health claims (Gröppel-Klein et al. 2017) are considered and whether these stimuli exert an influence on purchasing behavior.

Another study conducted at the IKV is by Kliebenstein and Gröppel-Klein (2015), which deals with a typical retail problem, namely whether retail shelves should be sorted by variety (e.g., for tea, all brands with rosehip flavor are brought together, then all peppermint or chamomile tea brands, etc.) or by brand (all brand A varieties – rosehip, peppermint, chamomile etc. are brought together, then all brand B, C varieties, etc.). In this study, the experimental participants were given the task of searching for two different teas. On the two shopping lists, once the brand was noted first, then the variety, and once the variety was noted first, then the brand. But which shelf is more "perceptually friendly" for customers? The test participants were divided into two different groups. The first group was confronted with a tea shelf with brand sorting, the second group with a tea shelf sorted by variety. Using a mobile SMI eye tracker, the search behavior was recorded on videos and the respective search time was noted.

> Regardless of the information on the shopping list (order), consumers took an average of 16s longer (about 62%) to find the two products they wanted when arranged on the variety shelf. The heat maps (Fig. 3.2) make it clear that the brands arguably provide more orientation, i.e., consumers immediately blank out certain parts of the shelf once they have discovered the brand they are supposed to buy. On the variety shelf, more fixations are assigned to the whole shelf. From the consumer's perspective, these results argue for an arrangement by brand. (Kroeber-Riel and Gröppel-Klein 2019, p. 292)

Eye-tracking can also provide valuable insights in online marketing, for example when analyzing the impact of ads in online shops. Eye-tracking can be used, for example, to check "banner blindness," i.e., whether consumers succeed in using their eye movements to avoid looking at advertisements on the internet (Hervet et al. 2011). Animated banners are more attention-grabbing, but again, as the study by Bahr and Ford (2011) shows, consumers learn to tune out these stimuli after a short time; furthermore, the animations were more likely to trigger annoyance and annoyance in the subjects. Finally, a study by Le and Vo (2017) concludes that pop-ups are also rather inadvisable, as they cause negative attitudes.

Not surprising, but nevertheless interesting in this context, is the study by Ju and Johnson (2010), who prove – also by means of eye-tracking – that perception is strongly dependent on the needs of the user in the online sector. They observed young women viewing fashion ads. Here, most attention was paid to the models, and less to the headline or the product name, which conforms to the well-known rule "image beats text in advertising." However, in this study it was noticeable that especially young female test persons looked at the attractive and slim models for a particularly long time, who themselves emulated the slimness ideal, which again shows that motivations control attention and perception.

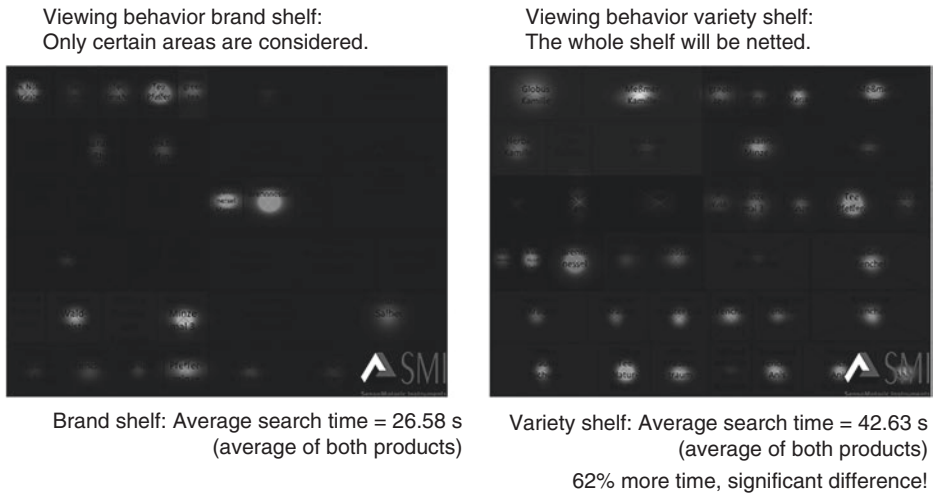

Fig. 3.2 Heatmaps brand versus variety shelf. (Source: Kroeber-Riel and Gröppel-Klein, p. 292)

In stationary shops, the subjectively perceived ease of orientation is very important for customer satisfaction. In the case of online shops, too, the desire for a clear structure and clarity can be observed on the part of consumers. Extensive literature is now available on this subject. Basically, it can be stated that fast, clear and easy-to-operate navigation facilitates customer perception in online retailing (Griffith and Chen 2004). In the online sector, a variety of experiments have been conducted on the perception of customer recommendations, in which, for example, the number of reviews or the comprehensiveness of the individual statements was systematically varied in order to determine which information perceived by the customers is particularly relevant for purchasing. Here, for example, it was found that individual but detailed (and perceived as trustworthy) reviews are perceived by online shop visitors as much more meaningful than aggregated assessments (average values) (Ziegele and Weber 2015).

3.3.3 Unconscious Perception

The term "subliminal perception" is no longer used, as this associates a clear boundary between unconscious and conscious perception, which does not exist. Instead, a gradual transition is assumed. Basically, however, one distinguishes between two groups of unconscious perception:

1. Unconscious perception is present in stimuli that cannot be perceived consciously even when attention is focused on them. These include very weak stimuli, e.g., visual stimuli presented for only a few milliseconds (Kiefer 2017; Bargh 2016). However, these stimuli can influence subsequent behavior in the short term, as relevant priming experiments have shown.
2. However, unconscious perception is also present in the case of stimuli that could be perceived consciously but are not processed consciously because attention is not focused or not fully focused on the stimuli. These include stimuli that are taken in only casually or that are sharing the consumer's attention with other stimuli (Shapiro and Krishnan 2001).

In the context of this paper, we want to focus on this second group. In department stores, as explained at the beginning, the consumer is often exposed to thousands of brands without being able to focus attention on this enormous variety of stimuli. Moreover, before entering a store, the customer is repeatedly confronted with brand or product messages without consciously noticing them. Thus, it is quite possible for a consumer to make an unplanned purchase of a drink in the supermarket simply because he has encountered another customer at the entrance door wearing a T-shirt with a large Coke logo printed on it, without being able to make a conscious link between these two events or even remember the other customer.

The effect research of casually perceived stimuli also includes the now numerous experiments on the effect of scents and music at the POS. These stimuli are often perceived unconsciously, while the consumer concentrates on visual stimuli in the store. We are therefore dealing with a multisensory combination of at least two senses (Drewing 2017, p. 77), whereby the concentration is on one sense while the other stimuli are only perceived casually. This is to be distinguished from a conscious, quasi-simultaneous perception of different stimuli, such as we experience during a wine tasting. We see the color of the wine, smell the bouquet, taste the drink, and try to determine whether it is a Riesling or a Pinot Gris by means of the various stimuli. Of course, there can also be a conscious perception of music and scents at the POS (see summarizing Kroeber-Riel and Gröppel-Klein 2019, pp. 141–142), especially if their intensity is high. If music or scents are consciously experienced positively, then they increase shopping pleasure. If, however, the stimuli are perceived as unpleasant, then consumers evaluate them as unauthorized attempts to influence on the part of the retailer and react with psychological reactance ("one senses the intention and is disgruntled").

In the following, however, we will focus more on the unconscious effect of these instruments and list some empirical findings as examples. Madzharov et al. (2015) show that "warm" scents (such as vanilla), in contrast to "cold scents" (such as peppermint), are able to create greater proximity between customer and product. Fragrances can also imperceptibly improve the memory of certain products (Morrin and Ratneshwar 2003).

Hynes and Manson (2016) show in their study that most supermarket customers do not even notice the background music, but that it can unconsciously put customers in a more positive mood and improve the perception of the offer of the shopping place. In this context, an older experiment by North et al. (1999) is particularly interesting. The authors compared the effect of German versus French music pieces with regard to the sales of German or French wines. The researchers were able to prove that on days with German music in the store, more German wines were purchased, and on days with French music, more French wines were purchased. In their experimental design, alternative explanatory factors were controlled for. The follow-up survey of the customers showed that they were not aware of the influence of the music. In a more recent experiment by North et al. (2016), the authors make the point that certain music genres (e.g., classical music) can evoke certain associations (e.g., high quality or educated) that are unconsciously transferred to the product being sold as part of evaluative conditioning and thus can change preferences. These studies outlined by way of example make it clear how the unconscious perception of the shopping atmosphere can also influence purchasing behavior.

3.4 Perception Illusions

Last but not least, this article will address the phenomenon of perception illusion, which plays an important role especially in the context of consumer protection policy.

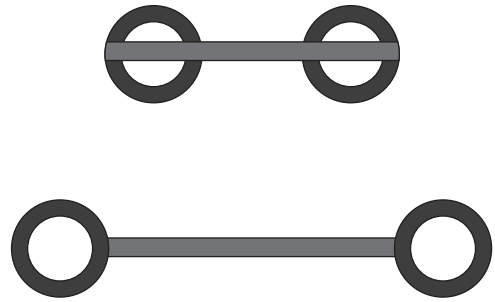

Fig. 3.3 Müller-Lyer illusion. (Source: Ditzinger 2013)

Numerous "classical" perceptual illusions are described, for example, the flickering grating, Müller-Lyer's illusion, or Ponzo's illusion, which prove that perception is "by no means a 1:1 representation of reality" (Müsseler 2017, p. 14).

In the Müller-Lyer illusion (see Fig. 3.3), for example, the lower stroke is perceived as longer than the upper stroke, although both strokes are exactly the same length. An important sensory illusion for consumer protection is the so-called elongation effect. This means that consumers attribute a larger volume to products in stretched containers than to those in less stretched containers (e.g., Wansink and van Ittersum 2003, p. 457; Yang and Raghubir 2005, p. 279), even though the contents are de facto identical. Such sensory illusions can lead consumers to misperceive value for money. Koo and Suk (2016) are not only able to confirm the elongation effect, but also find that stretched food packaging is associated with lower calorie content, which can then also exert an influence on dietary behavior. Downsizing also plays a role: if a product package is reduced in one size dimension (e.g., length) by 50%, then we immediately perceive of a 50% reduction in content. In contrast, the reduction in size of the package and thus of the content is perceived as much smaller if it affects all three dimensions of the package, i.e., height, depth, and width. Portion halving is not detected here (Chandon and Ordabayeva 2009, p. 751). Brands should be wary of resorting to these means, however, as the tactics are rightly denounced and exposed on consumer protection portals.

In addition to these dysfunctional perceptual illusions, however, sensory illusions can also be used for the benefit of the consumer. One thinks here, for example, of stretching items of clothing, impressive architecture, or the furnishing of rooms. For example, rooms that are too small can be made to appear larger by the addition of mirrors, ceiling-high shelves, or light wall colors; rooms that are too large can be made more comfortable by generous furniture and many decorative objects.

3.5 Conclusion

This article outlines the process of human perception and attempts to derive implications of perception research for retail marketing. It should be noted once again that perception is more or less conscious, subjective, and selective. One should not tire of emphasizing

that every person lives in his or her own world of perception. Nevertheless, perception can also be influenced and, for example, attention can be drawn to certain products or promotions through appropriate marketing instruments, which are then perceived by many customers and ultimately purchased. Retailers should also strive to increase the orientation friendliness of their shops as a matter of principle in order to take account of people's limited information processing capacities and present products in such a way that they have any chance at all of being noticed by the customer. "Unseen is unsold," as Chandon et al. (2009) once aptly put it.

But the process of perception is even more complex: The topic of multisensory perception, i.e., the interaction of the individual sensory organs, will gain in importance in research, as will the question of how multisensory experiences are created and experienced in online shopping. A sweater may look beautiful, but if it scratches, it won't be worn and will be sent back.

Similarly, there are still many open questions in casual perception. Here we need to discuss whether the basic possibility of unconscious perception is an efficient system. Does unconscious perception lead to unconscious learning and thus to an expansion of our abilities? When is it necessary for certain stimuli to penetrate our consciousness and thus make quick reactions possible? The latter is certainly also of great interest for consumer protection.

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Prof. Dr. Andrea Gröppel-Klein was Chair of International Marketing, Consumer and Retail Research at the European University Viadrina, Frankfurt (Oder) from 1996 to 2006 and has held the Chair of Business Administration, in particular Marketing and Director of the Institute for Consumer and Behavioural Research at Saarland University since April 1, 2006. Prof. Gröppel-Klein is a member of various editorial boards and editor of the journal Marketing ZFP. From 2008 until today, she has been involved in three EU research projects on "Health and Food." Since 2014 she is a jury member, since 2018 chairperson of the jury of the BVM Innovation Award. Prof. Gröppel-Klein has published more than 250 articles in renowned scientific international and national journals and since 2009 she continues the standard work on consumer behavior research founded by Kroeber-Riel (deceased 1995) (Kroeber-Riel, W. and Gröppel-Klein, A.: Konsumentenverhalten, 11th edition, 2019). Her research was funded by the Lise-Meitner Scholarship of the State of North Rhine-Westphalia (Habilitation), the BMBF and the EU.