145pt	HOWTO	145pt
128pt	CREATE	128pt
110pt	EFFECTIVE	110pt
110pt	R E T A I L	110pt
78pt	ACTIVATIONS	78pt
78pt	THROUGHTHE	78pt
54pt	UNDERSTANDING	54pt
48pt	OFNEUROSCIENCE	48pt
42pt	A N D C O N S U M E R	42pt
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'The aim was to, not only honour our progressive agency promise, but to give back to the wider industry, our brand partners, and peers with cutting-edge insights.'

Seen Displays is an intelligent, creative retail agency, with a strong commercial awareness and an uncompromising design aesthetic. We create engaging retail displays that deliver compelling consumer experiences and commercial value for brands. Thanks to our hybrid skill set of talented innovators and seamless production, our progressive, insight focused brands trust us to deliver effective retail spaces.

We have always had a clear and progressive process to ensure we deliver against our agency values. We invest in understanding the evolving landscape of retail to future-proof our brand partners as leaders on their high street, as well as investing in understanding each client's challenges and motivations. We do this by working as an extension of their team with an effective approach that interprets the brand more personally, rather than providing a one-size-fits-all solution.

Apart from our core experience and knowledge, which spans retail creative, production and delivery, we are taking the opportunity to refocus our insight generation process. Taking our concentration away from a project level to a deeper industry intelligence focus. The aim was to, not only honour our progressive agency promise, but to give back to the wider industry, our brand partners, and peers with cutting-edge insights.

Our annual survey, which invites our brand partners to share honest feedback on us as their agency partner, provided the topic for this report. In response to a question where we asked our clients to share their biggest commercial challenge, the most common topic was 'measurement' and how to quantify the success of retail activations.

We have chosen to commission a report that partners Neuroscience and Consumer Behaviour insight to provide us with intelligence on human behaviour. More specifically, how humans perceive and interact with environments, to learn how we can create more effective retail activations.

I would like to thank our brand partners for their continued trust in us, and look forward to sharing how this unique intelligence will inform our improved, consumer–focused design approach.

RETAIL ACTIVATIONS & THE ROLE OF NEUROSCIENCE

One of the most significant impacts on the retail industry will be the use of neuroscience in all aspects of the supply chain (Todd 2015). From online shopping to store navigation, product packaging to deliveries to the consumer - retailers are desperate to find new ways into the mind of the consumer. This can be to the point of retailers creating decisions for the consumer, trying to engineer the situations for consumer choice. Whilst this approach makes total sense from the retailer's perspective, it is not a plausible output for neuroscience. Neuroscience cannot help retailers anticipate or predict consumer choices. What it can do is create a deeper understanding of the processes behind a consumer choice.

Neuroscience is the study of the brain and the central nervous system, and explores answers to three central questions. What networks are involved in certain cognitive or motor processes, such as memory, attention, sight, or coordination? How do these different networks work together to achieve cognitive or motor processes? How do we, as humans, put our world together, and what are the neurobiological drivers behind our actions, choices, and perceptions?

Neuroscience has mainly operated within academic and clinical contexts, examining neurodegenerative diseases, traumatic brain injuries, and attempting to understand brain abnormalities in autism spectrum disorder, depression, and schizophrenia. With the newfound mobility of knowledge between disciplines, industry is asking more and more questions of neuroscience, however some of these are outside the discipline's potential as it currently stands. The brain networks

and their dialogue with the central nervous system is so complex that we only have had the technology to map one percent of the brain and recreate one second of activity (Sparkes 2014). This means that any claims of predicting consumer behaviour or choice is out of the remit of legitimate science. What neuroscience can shed light on, is how the brain interacts and makes sense of the world, it can explain the relationships between behaviour and brain networks, and it can help us understand what it is to be human.

In regards to the retail industry it can help set design heuristics for the retail environment that ensure the customer is getting the most optimised experience of the brand. Secondly, it can help us understand how the consumer is cognitively and structurally changing due to environmental factors, like digital technology. This allows us to help brands adapt their communication to the emerging cultural environment.

The science in this report is based on a range of studies, which have been reviewed and identified as being of sound quality, based on scientific methods, and robust pools of participants. The science has been translated and contextualised to a retail audience for better comprehension and application.

The report is divided into three chapters - the first will be an overview of how the brain works and how people perceive retail environments. The second chapter will cover how technology is changing consumer habits and the retail industry. Finally, the third chapter will be show a breakdown of a Seen Displays case study using neuroscience as a tool for discovery and design.

PERCEIVING RETAIL **ENVIRONMENTS**

EMPATHY

One of the greatest mental and cognitive assets of being human is empathy. The main association people have to empathy is as a kind of emotion, however empathy goes beyond a passing mental feeling. It is the ability "to sense someone else's feeling as if they were one's own" (Goodbun 2011). This ability has been crucial to our survival and social adaptation. It allows us to be interested in the world around us, as well as motivate us to engage with a vast variety of people. It is the cornerstone of human interaction, creativity, and a successful society, its role has influenced the creation of ethics, laws, rules. healthcare, and commerce. Without empathy we would be blind to anything or anyone else aside from ourselves, and any larger group identities such as community or society would be impossible.

SCIENTIFIC VIEW OF EMPATHY

Empathy is a necessary component of interpersonal relations and is considered a cognitive function. It requires certain cognitive elements like social cue recognition, understanding context, understanding tone, and affect regulation.

Empathy involves two distinct neural networks working in parallel. One form of empathic processing relies on shared representations (SR) of another person's mental state, whilst the second is associated with explicit mental state attribution (MSA). The shared representation (SR) network is visceral and automatic, contributing to attunement, but also allows for emotions to spread from one person to the next. It does this via commonality in neural activation in both social targets and perceivers.

In other words, both the person observing and the person experiencing have similar brain activation. The implications of this are mind blowing! For example, if a person watches another person go through a simple goal oriented task which produces emotional facial expressions like disgust or pain, the observer, without physically experiencing the pain or disgust themselves, will engage similar neuroanatomy (limbic, paralimbic, or sensorimotor systems activations) as the person who is actually having the experience.

The MSA network contributes to deliberate, perspective forms of empathic understanding. This means the perceiver is able to make explicit judgments of another person's intentions, thoughts or feelings. From a neurological perspective this occurs when temporal and parietal regions in the brain "mediate shifts in perspective, and medial prefrontal regions integrate semantic, contextual, and sensory data" (Rippoll et al. 2013). In contrast to SR networks, MSA networks are slower, explicit, and "capable of inferential abstraction" (Rippoll et al. 2013). This gives the MSA networks the perceivably predictive abilities about another person's behaviour and actions, which allow us to make more informed social decisions. For example, if we perceive a person is in a rush, we would decide not to interrupt them or we would shorten our engagement with them based on our reading of their behaviour. The latter is often referred to as Theory of Mind (ToM), which is associated with the ability to attribute other mental states than our own.

These two neural networks work together to allow us to both distinguish ourselves from others as well as identify ourselves in others. This process is fundamental to how we perceive the world around us. Without empathy we would not be able to understand our role or relation to the world.

APPLIED EMPATHY

Neuroscience is a historically recent discipline. however the etymology of empathy goes back further than the human cognitive processes as explained. Empathy entered the English language in 1909 "as the translation of the German word 'Einfühlung', which means 'feeling into' (Goodbun 2011) and it was in relation to our interaction with the physical world including architecture, design and art. For the Germans it was a concept that allowed discussion of how "we experience physical form through process of relational projection, imagining ourselves onto the shapes, or into the spaces of the world" (Goodbun 2011). However, it is also like an extension cord that allows us to perceive people and the world, distant from our state of being. The more we extend that cord the more we will be able to perceive. We use this information to develop more comprehensive points of view and reflect that through design.

Empathy leads to purpose and value. It changes the perspective away from suggesting the consumer is separate from the brand. With an empathetic perspective the brand operates and exists to satisfy the needs of the consumer by adding purpose and value.

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With empathy comes observation and questioning, leading to a deeper, fuller, and more developed creative experience. The brands that take the time to observe and perceive the driver's, emotions, challenges, and actions of their customers succeed above the rest. This questioning and observation is what makes leading brands more creative and innovative.

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In regards to retail activations, empathy allows for the creation of physical environments that speak and identify with the consumer. It personifies the culture, values and perspectives of the consumer allowing for a fuller emotive experience. Intelligent brands do this well, and they are rewarded by loyal consumers. Consumers no longer wish to be simply sold to, they wish to be understood.

CASE STUDY: AESOP

Australian retail company Aesop has mastered the concept of empathy both through brand and retail design. "Rather than doing so through conventional branding and advertising, they tell [their brand story] through unique environmental design and aromatic experiences; superiorly blended products; poetic writing; and their philosophy of 'unselling'" (Haldemann 2015). Their unique collaborative design process allows Aesop to constantly think about the context of their shop to their consumer's environment, leading to 100 stores that are innovative, desired, and culturally contextualised.





In their own words -

"We have been constantly delighted by the unexpected affinities that have come from the negotiation of differences involved in establishing new stores - by means of immersion in unfamiliar landscapes, investigation of local materials, engagement with local culture and history, and of course development of fertile new relationships. Our sincere interest in intelligent and sustainable design extends to every aspect of Aesop's workings"

(Aesop 2016)

EMBODIMENT

Fundamental to our existence, embodiment has always been directly represented in our relationship with the physical world. From an evolutionary perspective, we began our advancements towards modernity through our increased ability to alter our physical environment. We started by creating our first habitats to shelter us from the elements, we discovered how to use fire, which led us to create more sophisticated weapons and tools allowing us to hunt and gather, to establish further control and power over our environment. The progressive stages of adaptation, including the agricultural revolution, cultivated our reciprocal relationship with the landscape we find ourselves in, allowing us to function in larger social groups with more control and creative influence over our spaces. The longer we interact with our environment, the more it reflects our needs and the more we recognise it. The more we recognise it, the more we can advance and thrive within it.

Our dialogue with our environment co-evolved with our cognitive development and we can see this in our anthropological history. The evidence begins with early cave painting, which developed in conjunction with our need to tell stories, which in turn developed us further as it demonstrated a way to use our environment to pass on thoughts and feelings to others. When we look at cultural environments such as the pyramids of ancient Egypt,

we see a space which personifies the societal structure, culture, and mathematical prowess. The Egyptians needing to reach the gods pushed their imagination to create structures full of significance, poignancy and emotive and cultural impact. This relationship between our mental capabilities, thoughts, stories and the physical environment continues, it is central to our social evolution, and brands are now using it more than ever to communicate their culture and their message.

At the core of embodied cognition we must understand how the brain interprets the environment and concepts through the different layers of schemas, language, and the senses, and weaves them into a whole. We do not only experience a cold surface with our touch, we conceptually experience this as well. For example, the conceptual understanding of the word 'cold' can relate to the uncomfortable feeling we might experience when someone is unfriendly towards us. Similarly, we can feel 'warm' in more ways than one - both from the temperature in a space, and as an expression of comfort in the space. There is a constant dance between conceptual representations, sensory motor systems, and the physical environment. This leads us to be both influenced by our physical world and in turn drives us to influence it.

SCIENTIFIC VIEW OF EMBODIMENT

For the purpose of this report the term embodied is related to embodied cognition, which is still a relatively new area of scientific research. According to Dr. Jon Goodbun embodied cognition "is constituted by emergent and self-organised processes that span and interconnect the brain and the body with our physical environment" (Goodbun 2011). It is also believed that cognitive outputs like intelligence emerge from the interaction with our environment as a result of sensorimotor activity. These theories are quite new as traditionally studies have focused on symbolic reasoning, which meant "paying little attention to the body and to the ways intelligence is affected by the physical world" (Goodbun, 2011). Yet, many child developmental studies have shown that babies begin their cognitive journey through the interaction of their bodies with the physical world, engaging multiple sensory and action systems. As a baby the whole world is tasted, touched, and physically manipulated, allowing them to learn about aversion, attachment, pleasure, and pain. Furthermore, functional magnetic resonance imaging (fMRI) scans show that "motor processes are automatically engaged when participants perform conceptual and perceptual tasks" (Smith & Gasser 2005).

It is important to note that there are those that believe in a disembodied theory, which sees a separation between concepts and the sensorimotor networks. Regardless if there is a separate or simultaneous activation, at the root sit three observations; the motor sensory system is automatically activated when participants (a) observe or manipulate objects, (b) process linguistic stimuli (e.g. action verb), and (c) observe the actions of another individual. Even linguistically we use it to express ourselves metaphorically through the use of physical properties. For example, important things are seen in correlation to size 'tomorrow is a big day' or 'that is a big idea' (I akoff & Johnson 1999).

APPLIED EMBODIMENT

Embodiment is paramount to brand identity and how it extends itself to physical environments such as retail activations. How does the brand embody its values, story, and concept through the physical retail environment? In recent years there has been "an emphasis on the importance of the emotional and experiential aspects of consumer culture in brands" (Amacker 2014). Therefore creating an embodied retail environment, which both

matches the brand's message and the consumer's culture, is fundamental to the success of a retail activation. In the context of retail activations, embodiment means ensuring that the conceptual mind frames match the physical environment, which reinforces the brand message and identity. For example, if the brand wants to communicate transparency then the physical elements should match it. Design elements like natural light, visual space, easy navigation, or light materials will help embody the concept of transparency. However, more often than not these two aspects are unmatched and brands miss a crucial communication element.

"We have an amazing capacity to grasp complex environmental entities through simultaneous multisensory sensing of atmospheres, feelings, and moods. This capacity to instantaneously grasp existential essences of vast entities, such as spaces, places, landscapes and entire cities, suggests that we understand entities before we identify their parts and details"

(Pallasmaa 2013)



MEMORY

At its core, retail activations should create memories, and the measure of great retail activations is in the creation of lasting memories that stay with the consumer long after the experience. This means creating retail environments that have the right combination of novelty and familiarity, sensorial orchestration rather than saturation, and are highly empathetic to consumer perceptions and needs.

Cognitive neuroscience is a breakthrough field that is providing the industry with a new insight on human perception and cognitive behaviour as well as providing new heuristics for design that go deeper than aesthetics or metrics. This is especially helpful as people are not logical. We make consumer decisions based on "how we feel about the products arrayed and the experience we are having at a given moment" (Travis 2014). Therefore designing retail experiences only based on metrics or aesthetics can leave us ignoring the consumer, which results in flat and alienating retail environments. In this chapter we will aim to understand how people perceive physical environments and what this means for retail activations

SCIENTIFIC VIEW OF MEMORY

The creation of memories is central to the success of a retail activation, to the extent that all of the other elements revolve around it like the planets around the sun. Before discussing or defining memory, we first have to understand a little about how the brain works.

The brain works in networks that activate according to stimuli, events, and actions. For instance, the networks in your motor and sensory systems will activate if you wanted to climb a set of stairs or use a spoon to eat. Memory is a set of networks that come together as a system to create the capacity for conscious recollection of facts, events, people, activities and so on.

The brain is not a computer that 'stores' memories nor is it an engine where one 'part' correlates to a specific function. It is more like an orchestra playing a symphony, where the instruments play in unison to create the symphonic sound (consciousness) and the chords (neural networks) each create distinctive melodies,

which when experienced together create the symphonic sound. We cannot say that one violin makes all the difference or equally one missing violin would destroy the whole sound. It is a system, in which the whole is something greater than the sum of its parts.

From a philosophical perspective memory can be defined as "representational, providing a way to model the external world, and as a model of the world, it can be both accurate or inaccurate" (Squire 2004).

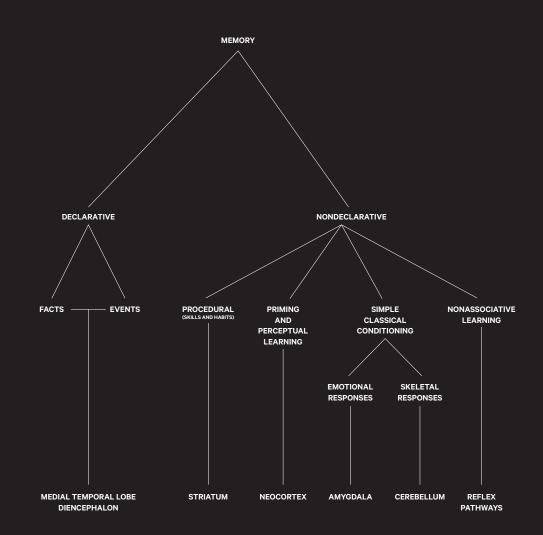
There are two main classifications of memory, declarative and nondeclarative.

Nondeclarative memory is the "ability to gradually extract the common elements from a series of separate events" (Squire 2004) and it is a product of unconscious processing. For example, the procedural memory system helps us learn habits and skills like tving our shoelaces or riding a bicycle. There is no conscious recollection of each part of the process, we just do it.

Declarative memory is the ability to detect, encode, and recall what is unique about a single event in a particular time and place. Declarative memory in relation to retail activations has particular importance, with the most significant memory system in this classification being episodic memory.

Episodic memory is the cinematic view you experience when recalling a specific event or experience. You can remember sounds, smells, light, actions, and faces as if you are travelling back in time. It is this experience, which people commonly refer to as memory, and it is this type of memory we will continue to discuss in this report.

Memory systems "operate in parallel to support behaviour" (Squire 2004), for example, an aversive past event involving being trapped in a packed elevator can lead to a constant declarative memory for the event itself, i.e. recalling all the different key elements of the time and place when the event occurred as well as a long-lasting nondeclarative fear of small spaces (phobia) that is experienced, this complex memory manifests in behaviour rather than any one particular memory.



FORMING MEMORIES

The next phase in understanding memory is to look at how memories are formed. There are three stages to the formation of memories; encoding, consolidation, and retrieval

Encoding is the first stage, when a stimulus is encountered for the first time. This means the first step in memory encoding is directing our attention towards the stimuli (event, person, action, object).

"Although several factors can influence how well a stimulus is encoded. the ability to perceive and attend to the stimulus is a primary factor"

(Mastin 2010).

The second phase is consolidation, which is a more accurate description than 'storing', as the brain doesn't 'hold' information, as there is not a place in the brain where you could 'find' the memory of your first trip abroad for example. "In what we will call the 'standard' model, memory consolidation begins when information, initially registered in the neocortex, is bound into a memory trace by the hippocampus and related structures in the medial temporal lobes and other supporting networks" (Squire 2004). It is as if the memories are being set within the networks and this takes time, one theory is that memories need to consolidate with emotions and sensorial information

How a memory is consolidated will play a key role in the final phase, which is retrieval or the recollection of a memory. It starts with a retrieval cue, which serves as a primer or the "process of presenting an event, episode, stimulus, etc. that prepares the episodic memory system for functioning" (Mastin 2010). The "cues that are most effective in probing our memory are those that are similar according to a feature, cues that use the same process that was used during encoding, cues that are contiguous in time and space, cues that are semantically related, and cues that are otherwise associated in conceptual

hierarchies". The cues are set during the consolidation period, which is why it plays such a big role in retrieval. Imagine all the different senses, actions, configurations of space and time, and emotions that are involved when we are recalling a vivid memory. Every single element is tied to different networks that come together when a memory

MEMORY AND EMOTION

One of the most important factors in the entire memory process are emotions. Emotions are like a temperature gauge that help us measure the intensity and relevance of stimuli whether that be an event, person, or even a thought for further learning. For example, if a mosquito bites your arm, you feel pain and annoyance, therefore we learn how to avoid them to not feel those two adverse emotions.

Until recently emotion has not typically been linked to cognitive behaviours, such as memory or attention. However, "it has been become increasingly clear that we can no longer neglect the exploration of emotion, as it is rarely absent from our daily functions" (Phelps 2004).

Looking at emotions as a gauge, they also fluctuate in potency. Seeing your best friend is more likely to excite you than seeing a work colleague. You may feel excitement for both, but as your best friend would have more emotional attachment to you, and more associated emotional memory, your excitement would be higher.

It is not surprising that memories for emotionally heightened events have more saturation, vividness and persistence than other types of memories. Remembering what you did last Tuesday (unless it was exceptional) would be a far less vivid memory than remembering the day you had your first promotion at work. This enhanced memory capability "observed for emotional events is due to the amygdala's influence on the encoding and consolidation of hippocampal-dependent memories" (Phelps 2004). Furthermore, the hippocampal complex can, by forming "episodic representations of the emotional significance and interpretation of events, influence the amygdala response when emotional stimuli are encountered" (Phelps 2004). What we can understand from this is that the amygdala and hippocampal complex work in harmony to link emotions to memory.

APPLIED MEMORY

Memory is one of the most important human cognitive processes for brands working in the retail industry. The moment a consumer collides with a retail environment they are creating memories. There are two key learnings to understanding memory in application to retail.

THEY ARE AS FOLLOWS:

environment our encoded memory starts to consolidate to form a long lasting memory of what we experienced. Here is where memory makes a transition into learning and knowledge.

When we walk into retail environment, we are given specific knowledge about the brand, or so should be the goal. From the graphics being used, the lighting, images, layout, and customer care, they all give the consumer knowledge about the brand. This knowledge is passed on as memories to specific curated group of people such as families, groups of friends, professional groups, and online communities.

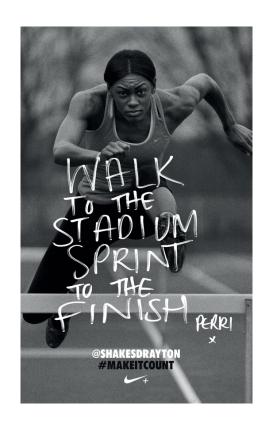
This process underpins the start of cultural memory, which is the "collective concept for all knowledge that directs behaviour and experience in the interactive framework of a society" (Assmann & Czaplicka 1995). This is how a brand can begin to not only be part of culture, but to influence and create culture through these moments of retail activation.

1. After we experience an event, activity or physical 2. How well a person processes the brand's culture is dependent on the emotional quality of the retail activation experience. As we learned from how memory works, there is a strong link between emotion and memory encoding and recollection. This means that brands should aim for retail environments that create strong emotional responses. However, this is not the same as exciting people. It is about orchestrating emotional touch points that are curated to a particular demographic.



CASE STUDY: NIKE

A good example of a brand that creates lasting and potent memories and uses them to perpetuate a specific culture is Nike. In their 2012 campaign "Make it Count", Nike encouraged people to tweet their goals of the year using the hashtag #makeitcount. Photographer Adam Hinton took portraits of famous athletes in moments of intense training to accompany the campaign (Williams 2012). Posters were then created and exhibited in the Nike Lab 1948 in Shoreditch, East London, and people were asked to share their pledges for the year. The posters portray the athletes in an intense emotional state. This, in combination with the ability to share your own moments of high intensity, creates an emotionally charged exchange and experience. In turn this creates a longer lasting memory of the experience, achieved through multiple cues to enable great retrieval, and high sharability post event.



ENRICHED ENVIRONMENTS

As we have learned, the richer an experience, the more poignant the memory. Therefore brands should aim to create sensorially enriched retail environments, which engage consumers at a deeper level, transcending simple aesthetics.

SCIENTIFIC VIEW: ENRICHED ENVIRONMENTS

The standard definition of an enriched environment is a combination of complex environmental and social stimulation.

The term was first used in scientific laboratories carrying out studies with rodents. Cages that were filled with tunnels, nesting materials, toys, diversity in the food supply and locations were labelled as enriched environments. The other factor is that they were put in with other rats heightening their socialisation and interactions. These rats were then studied for neurogenesis, which is the ability for our brain to create new neuronal cells. Rats in enriched environments showed improved performance in a spatial learning test in comparison to rats in non-enriched environments. These results concluded how "environmental cues can enhance neurogenesis in the adult hippocampal region, which is associated with improved spatial memory" (van Praag et al. 2000). From a human perspective, it would be the equivalent of an environment having diverse sensorial stimuli, areas of interaction, activities, textures, and a diverse group of people.

Understanding the impact of an enriched environment on conscious experience has been a significant discovery and has influenced many architectural discussions on the role environment plays on brain function. The discoveries demonstrate how sensitive and influenced we are by our physical environment. "However, it remains unclear whether the learning and memory enhancement observed after these treatments is causally dependent on the increase of neurogenesis" (Bekinschtein et al. 2011). It is a combination of factors, for example enriched environments "were shown to increase total granule cell number, alter dendritic complexity and spine density and increased vascularization in the hippocampus, which could have an effect on memory" (Bekinschtein et al. 2011).

There is also what we have learned about emotion and the encoding of memory. It could be that enriched environments, due to the amount of stimulation and novelty, cause a heightened sense of emotion thus affecting the effectiveness of the encoding of a memory (Bekinschtein et al. 2011).

This view of enriched environments implies that it is an orchestration rather than one dominating factor. In other words it is the "interaction of factors that is an essential element of an enriched environment, not any single element that is hidden in the complexity" (van Praag et al. 2000). From a neuronal structure perspective, it makes sense that the more diverse stimuli an environment has. the better it is for our perception of it. There is the theory that "any single function can be carried out by more than one configuration of neural signals and that different neural clusters also participate in a number of different functions" (Smith & Gasser 2005). This process creates redundancy such as, the system still functions as whole even with the loss of one component. "For example, because we encounter space through sight, sound, movement, touch, and even smell, we can know space even if we lack one modality. Being blind, for example, does not wipe out spatial concepts; instead, as studies of blind children show, comparable spatial concepts can be developed through different clusters of modalities" (Smith & Gasser 2005). This highlights the importance of creating enriched environments, which have various sensorial stimuli and places of activity. Giving the individual various opportunities to perceive and take in the physical experience.

APPLIED ENRICHMENT

Creating enriched retail environments provides consumers with a physical experience that is memorable and sensorially invigorating. Below are key points and elements to understand about enriched environments in relation to retail activation.

An enriched environment is not about creating an oversensorial experience that creates distraction and visual chaos. This is often a mistake that brands make, like in the case of Google's office design. They confused stimulation with a saturation of senses, making it difficult for workers to concentrate and focus. A successful environment is a carefully curated orchestration of the senses and visual gaze. It is essential to ensure there are various points of activity, engagement of the senses through sound, texture, lighting, and if appropriate through food and fragrance. Finally, servicing the retail environment with an interesting group of people (i.e. the staff, hosts, and attendees), helps the consumer be socially engaged and further enriches the experience.

The enriched retail activation will also pique the consumer's curiosity as the different stimuli will tempt them to explore the physical space at their own time and based on their own interest. This will increase the dwell time in the physical space and allow for a deeper connection and interaction with the brand. In other words it will give them time to consolidate their memory in the space adding to the poignancy of recall after the experience. The final point is that it should be in context of the brand and the values of the consumer, as creating an alien environment will put people off rather than attracting them and there will be little relativity to the brand on recall.





CASE STUDY: WHITNEY MUSEUM, NYC

When interviewed, Piano said the intention of the museum was to create a "social life, urbanity, invention, construction, technology, poetry, light — an immense rich bouillabaisse" (Mindel 2015). He has not fallen short, this museum offers an enriched environment with a wide diversity in senses through his use of light, a diversity in space - as you can experience both art and the city from its outside spaces - and a diversity in activities, as you can dine, read in its library, view the city from its balconies, and experience the art. The museum also has an education centre offering a unique opportunity for people to engage conceptually and socially with the space. Piano also took this diversity to the outside of the building. The building itself is visually stimulating, with each side providing a different shape and visualisation of the city around it. Judging by its reviews, Renzo Piano has managed to create not only a unique space but an enriched environment that people are enjoying and propagating through social media.

"Designed by architect
Renzo Piano, the new
building includes
approximately 50,000
square feet of indoor
galleries and 13,000 square
feet of outdoor exhibition
space and terraces facing
the High Line"

(Whitney Museum 2016).



DIGITAL TECHNOLOGY AND ITS ROLE IN RETAIL

THE TECHNOLOGICAL ERA

We are living in an era of unprecedented technological growth. The executive chairman of the World Economic Forum calls it the Fourth Industrial Revolution which is currently transforming humankind (Schwab 2016). Technology is indeed changing some of the fundamentals - how we live, work and relate to each other - all at a pace and scope that we have never experienced before. It is no surprise that technological breakthroughs influence areas such as robotics, artificial intelligence, self-driving cars, 3D printing in medical environments, neuroscience, quantum computing, biotechnology and much more. Beyond these specific technological advances, the radical shifts in communication and easily available technology are changing industries everywhere. These changes have a huge impact on the way business is done, how we behave and how we consume.

Understandably, many people are cautious about these advancements, especially as two changes are already clearly emerging - firstly, an interconnectedness of different sectors that we haven't seen before, and secondly, the emerging complexity in these systems (Schwab 2016). Each sector of society, including business and retail, can play a crucial role in shaping this fourth industrial revolution, and we have the opportunity to ensure it is humancentric, empathetic and that it empowers us.

THE DIGITAL REVOLUTION

This revolution provides us with digital tools, services and applications, and allows us to engage with content at all times and in all places (World Economic Forum 2016). This is unavoidably affecting user behaviours, which has deep implications for retail and its associated industries.

Consider this, in 2015 there were over 3 billion people that used the internet, with more than 2 billion users actively using social media (World Economic Forum 2016). This almost incomprehensible growth in digital media use has turned us into a generation where the sharing, consuming and creation of content has become an integral part of our lives. The Digital Media Survey conducted in the last quarter of 2015 has found that more than one third of this generation participates several times, if not once, daily (World Economic Forum 2016), and on average spends more than three hours a day on social networking.

This has many implications for both traditional and new media, as consumption has changed significantly. To get people to engage via digital media, brands need to do more than just throw content at them. Humans quickly developed mechanisms to ignore content which isn't valuable, and doesn't engage. Smart brands need to cut through the noise and stimulate, as well as provide the consumer with the relevant information. The World Economic Forum has identified that successful brand engagement occurs when the brands "enter a conversation with consumers through social media" and exhibits "socially responsible behaviour" (World Economic Forum 2016). Instead of passively consuming, as was the case with the traditional media, the digital media user is more proactive in the way they engage the media space. Jeremy Heimans of Purpose correctly identified that "Consumers have a lot more agency. They are no longer just passive receivers of goods, services and content." Users now share, which has become an integral part to their expression of self both online and offline. Creating a profile of oneself online means that actions taken there reflect the user's identity. Social media now functions the same way letters used to - it is a way to stay in touch and keep updated with friends and family. It is this generation's storytelling.

"People want what they've always wanted: storytelling. What has changed is how you do that. HBO's television dramas with their short seasons are powerful examples of how this demand is being met. Likewise, long movies in cinemas targeting the over-35s are a growth market. Instagram is also storytelling. Twitter is essentially iterative storytelling."

Participant at Project Workshop in New York in May 2015 (World Economic Forum 2016)

The new tools that digital spaces provide us with mean that anyone can create content, and cultural commentary becomes content itself. This is shifting the way the media, advertising, retail industry and individuals produce content outputs. This has its benefits and downfalls. Even though this creates a democratization of content and allows for millions more voices to be heard, it also brings with it problems such as quality control as this content is not vetted (Seeland 2016).

So what does this mean for the industry? Unsurprisingly, it has been shown that digital media users sharing content which taps into emotions are more likely to have their content shared with others. This contributes to traditional approaches, but we should not forget that this has also produced a new type of economy - reputation economy (World Economic Forum 2016). In other words, the content posted is ingrained and plays into the person's reputation and personal success. The users themselves are now becoming 'brands'. However one should not forget that apart from the 'me' these kind of technologies also play an integral role in the 'we'. Content sharing allows us to experience collectively. Many brands have caught onto this and realised that those communities can be seen as symbiotic partners in developing the brand's identity. The users themselves are now seen as an integral part for distribution of the brand's content. Research has shown that "trust in brands in now being heavily influenced by shared user experiences" and that "many of today's buying decisions are made on the collective knowledge / experience shared by others" (World Economic Forum 2016).

ENGAGING CONSUMERS VIA SOCIAL MEDIA

32%

Social media has proven to be particularly effective for brands when targeting young people aged 16-24.

of those in this age group have liked or become a friend of a

brand online

have visited a brand's fan page



"Over the next 10 years, people's identities are likely to be significantly affected by several important drivers of change, in particular the rapid pace of developments in technology. Humans adapt, accordingly, our predecessors have always had to embrace a changing world where new inventions and technologies have, in turn, driven lifestyles, insights, tastes and priorities. So why would the digital era be any different?"

(Greenfield 2014)

A CHANGE IN SELF

Firstly we have to distinguish the type of change apparent in branding and retail activations. For the purposes of this report we will refer to digital use and content primarily in the form of communications technology and social media - connective technologies. Studies at the moment cannot provide us with good empirical data on the effect these technologies have. To examine structural brain changes. a study would need more time and more comprehensive sample sizes. However, with current information available what we can see is that the most evident changes are in attention and the reward system. As we are in the midst of this adaptation to technology and data is still being gathered, the long term implications are still not entirely evident or understood, and interpretations of the available information are varied.

The media often uses the rise of selfies to suggest that we are now also experiencing higher levels of narcissism. There are studies which support this theory, but just as many that dispute it. Digital anthropologist Daniel Miller suggests that instead, selfies "may be viewed as an important genre for better understanding issues of identity, aspiration and social expectations" (Daniel Miller et al. 2016). While the term narcissism proposes an orientation towards the self, he believes that selfies are actually most commonly used to preserve social relationships and to relate to their specific audience. Interestingly, supporting his argument is a study conducted in England that has uncovered that the young generation posting selfies are five times more likely to share a group-selfie than an individual selfie. Miller believes that "this circulation of images reinforces sharing current experiences, as well as sharing memory". An interesting analogy has been made by Pierre Bourdieu in his study which examined analogue photographs of farmers in the 1960s. Similar to the groupselfies as we know them now, the most prevalent pictures shows celebrations, from weddings to other social entertainment. Bourdieu suggests that these images should be seen as 'sociograms' (Bourdieu & Bourdieu 2004) that allow for the understanding and recoding of social roles and relations. However, as photography was rare and expensive back then, only grand occasions were seen to be worthy of photography. So how does this relate to the current use of social media, where we encounter an ever-present stream of images thanks to the spread of smartphones and sharing platforms? Even though

they can still be seen as sociograms, albeit at a different order of magnitude, it is useful to note that some research indicates that the increased use of digital media is having both physiological and cognitive effects.

Sherry Turkle, director of the Initiative on Technology and Self programme at MIT, has noted that the generation of young people (13-19 yrs) are having difficulty with making and keeping eye contact as well as listening. They are also experiencing difficulties in reading body language. However, other research has indicated that for many users physical personal interaction is still crucial, and that their online relationships are only an additional factor to that physical experience.

Studies have also examined the effects of excessive digital media consumption on levels of empathy. Once more findings are at odds with each other. A study published in 2012 by Sara Konrath suggested that compared to college students 30 years ago, current college students are 40% lower in empathy, as measured by standard tests of this personality trait during commonplace everyday situations (Konrath et al. 2011). Situations include scenarios as for meal times while having their phones out. Her findings indicated that conversation topics as a result are more generic and less personal due to the declined empathy connections between the individuals.

However only 7% of participants of a digital media survey say that they feel that digital media and technology has an impact on their empathy levels. Interestingly, and contrary to findings by Konrath et al, more than 50% actually feel that it is having a positive impact (World Economic Forum 2016). Thus we should be asking ourselves whether instead a transformation of the definition of empathy is now occurring.

One of the most consistent findings so far has been in relation to stress levels due to digital media use. Stress is a well-known potential health risk. A group of researchers from the University of St Gallen studying 'technostress', i.e more content than one can attend to without experiencing anxiety, has identified three phenomena associated with stress - overload, invasion and uncertainty (World Economic Forum 2016)

If we start putting this interaction in the context of some recent neuroscience literature, research indicates significant cortical reorganisation, based on motor and sensory stimulation (Biocca 2000). It is thus no surprise that digital media use is affecting cognition too.

There have been several significant findings which indicate that digital media use is associated with decreased recall rates, particularly with information that individuals think is easily accessible online. Furthermore, in 2015 the Statistic Brain Research Institute published findings which found that attention space has already decreased by more than 30% since 2000, which supports findings by another study published by Microsoft.

The diminished attention space has been brought into connection with sensory overload. Research has shown that in many cases sensory overload is associated with impaired cognitive function, raised physiological stress, and a negative affect on social interactions (Baruth et al. 2010). Sensory overload is closely tied to event-related potentials (ERP). In layman's terms, ERP is the brain's response to a stimulus or event. ERP is thus linked to auditory and visual perception, as well as attention. ERPs can generate an amplified signal across the brain and cause greater synchrony in response to stimuli that subjects are asked to attend to. So in other words, attention influences later stages of processing. One can easily imagine that changes are likely to occur as we are faced with constant imagery, constant messages, and constant noise, amongst other things, so common in current retail environments. Thus it is no surprise that the retail landscape is already intuitively changing.



CHANGING EMPATHY

It has been reported by a group of scientists that empathy is 40% lower in current college students compared to 30 years ago. This was tested in a multitude of everyday situations, such as at meal times when subjects would typically have their phone out.

THE CHANGING RETAIL

LANDSCAPE

So what do these digital advancements and cognitive changes mean in the context of retail? The most prominent changes that retail is currently undergoing are reflected in the rise of pop-ups, increased omnichannel efforts and the consumer desire for personalised experiences and products.

PERSONALISED EXPERIENCES

As discussed, consumer expectations and behaviours have shifted while the traditional retail models are dissolving. In such an oversaturated market, it becomes increasingly hard to be able to capture the consumer's attention. Think further than personalised e-mails. Consumers want to be spoken to and expect brands to already understand their taste, needs and wishes. Personalised experiences should happen via all channels. Thanks to rapid technological advancements, and with the amount of data that brands now collect from their customers, this is something which can now be achieved easier and faster. This allows brands to provide more for their customers with more customised services and products. Consumers now want products which are tailored to their lifestyle, while still allowing them to customise and personalise to stand out. "Retailers of the future will need to ensure that their supply chains are also evolved enough to handle the demand for custom orders" (Thau 2015). Pop-up stores also play an integral role for brands as they have the ability to portray a specific lifestyle and can provide consumers with a localised experience fit for that specific consumer group.

POP-UPS

As we live in a time of exponential change, the retail industry has become ever more competitive while facing four central strands - change, complexity, contradiction and chaos (Hitt & Reed 2002). Not only are sector boundaries blurring, but there are more channels to sell and market to an increasingly demanding customer base. Nowadays many customers see the predictability that flagship store can offer as a weakness, thus brands need to offer consumers innovative concepts without changing their brand identity (Haas & Schmidt 2016). One of the answers that has emerged from the retail industry in response to this change are pop-ups.

Empty retail spaces being used by companies for a temporary residence before disappearing again are not a new concept. Historically this is a centuries old process, however over time they have taken on different formats and versions. While originally they were used to

sell surplus goods, over the last couple of years media attention has focussed on the rapidly increasing number of pop-up stores by global organisations such as Comme de Garcon, Nike, American Apparel and The Gap which are targeting the mainstream. Some consider pop-ups even as a form of art where potential customers have the ability to experience surprising and/or exclusive entertainment with a programme that supports the brand's identity, such as music, films, shows and more (Haas & Schmidt 2016). Many of these established brands are now using pop-ups as part of their overall multichannel offering (Marciniak & Budnarowska 2009). What has changed since the early days of pop-ups is their use of internet and mobile technologies to evoke excitement in today's retail environment. Social media is allowing for communication between the brands and the customers without time and place restrictions, as well as turning the traditional one-way communication into an interactive two-way direct communication (Kim & Ko 2016). This changes the traditional dynamic, and now allows the two parties to work together to create new products, services and even values - thus ultimately giving the brand increased exposure while strengthening their relationship with the customers (Kim & Ko 2016). Research into the use of social media for the luxury market has furthermore indicated that ultimately social media contributes to the lowering of prejudice towards brands, and elevation of the brand's value (Kim & Ko 2016).

From a more pragmatic perspective pop-up stores are closely linked to our current economic climate considering the dip the retail sector has been experiencing (Benigson 2008). Not only do they differ from flagship stores when it comes to accessibility and equipment, but also they provide brands with a strategic purpose (Haas & Schmidt 2016) - providing an opportunity to provoke and encourage demand, test new products in an environment which can be cheaper than a full shop fit out. Furthermore, a study by the Centre for Economics and Business Research suggests that pop-up retail has generated more than £2.3 billion, in 9400 pop-up shops in the UK alone (Davis & Evans 2014).

Pop-ups also allow for resourceful and creative marketing opportunities, which have gone beyond the traditional print and broadcasting mediums (Baker 2008). Instead pop-ups primarily act to build brand awareness more than anything else. "Pop-ups give people a taste of your product and keep it fresh and always on people's minds"

(Tran 2008) as their temporariness creates not only a sense of massclusivity (Trendwatching 2003) riding on the emotion of 'best kept secret' in town, but also urgency, as consumers know that it will be there only fleetingly. This sense of urgency that consumers feel in itself leads to mouth-to-mouth marketing creating a viral like phenomenon (Trend Marketers 2015), which contributes to the fact that retailers' marketing budget is cut substantially as the steep advertising costs of traditional ad space now makes up less of their total output (Baker 2008; Gogoi 2007). Not surprisingly, this method is incredibly successful with research having shown that "80% of brand decisions are influenced by someone other than the marketer of the brand" (Rice 2001).

"Pop-ups are the epitome of our high-speed, short-attention-span culture"

(Barr. 2008).

Furthermore, pop-ups are creating a much needed distinction in many look-alike streets. Just as with flagship stores, usually located in affluent and trendy areas (Fernie et al. 1998), the success of pop-ups too is closely linked to location. A study published in 2004 has shown that the location influences the perception and receptivity of brands (Law et al. 2004). However, apart from location, pop-ups still have the ability to generate experiences that the customers will remember (Pine & Gilmore 1999).

"Obtaining memorable experiences requires tapping into customer emotions, the customers need for fun and hedonistic experiences and also understanding the significance of symbolism as part of the consumer's consumption process"

(Addis & Holbrook 2001; Marciniak & Budnarowska 2009)

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OMNICHANNEL RETAILING

As we can see, technological advancements are affecting industries all over, and retail is not exempt of these changes. Technologies like augmented reality and mobile computing are increasingly blurring the lines between traditional retail channels, providing sensory information and internet retail (Brynjolfsson et al. 2013). In the UK, more than 75% of adults own smartphones and 59% are using their phone to browse shopping websites or apps (Deloitte, accessed on 26.05.16).

When Internet retail first started, low prices and a wide array of articles was used to entice consumers to purchase items online, while normal stores were able to provide consumers with instant gratification. However, we have now hit a point where we are seeing a progression where these two areas will no longer be disconnected from each other, but actually start complimenting each other - omnichannel retailing.

"The retail industry
is shifting toward a
concierge model geared
toward helping consumers,
rather than focusing
only on transactions and
deliveries"

(Brynjolfsson et al. 2013).

This shift towards omnichannel retailing has many impacts on retailers. One of the most prominent changes has been that a generation of consumers now actively acquire product knowledge whether it is in-store, blogs, review sites, or anything else. They may then purchase via another channel separate from where they received the information. Many companies and brands have been struggling with this new consumer behaviour, however what this does indicate is that retailers need to improve how they present and share product knowledge across all channels. Doing so will create ease and allow consumers to purchase products on whichever channel they prefer – whether it is online or offline. Interestingly "consumer loyalty tends to be higher for 'experience goods' (goods whose value can only be assessed after they are

purchased) than for 'search goods' (goods that can be assessed before purchase based on objective criteria)" (Brynjolfsson et al. 2013).

Many have seen that omnichannel retailing is also an opportunity and can give competitive advantage as this is allowing retailers to become more data, and analytics oriented. This means that retail display agencies, marketers and advertisers too will be expected to change their approaches, ultimately delivering more tailored and accurate messages to the consumers.



"When consumers venture into a brand's physical location there's a demand for unique experience - a true connection to, and an understanding of, the brand's personality. Physical locations are becoming exhibition spaces to tell a brand's story in an emotive and sensorially engaging way, to develop and nurture brand advocates.

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When consumers interact with a brand online (in a shopping capacity) they demand ultimate convenience. They live on-demand lifestyles, services such as Netflix, Uber, Seamless and Spotify means they now expect immediate service and on their own terms. When this is translated into retail this means 1 hour delivery, intuitive suggestions and endless variety.

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When consumers interact with a brand on a content level they don't just want practical product information, they want editorial/film/ photography/audio content that enriches their wider lifestyle and communicates to them in a manner and platform they're comfortable with."

CASE STUDY: SELFRIDGES

44

In June 2016 Selfridges launched their global 'get HAPPY' app. Apart from a personalised 'Your Favourites' section, the app offers the store's entire product range, as well as providing intuitive, location-based information, guiding consumers towards special promotions, specific news and insider events. By delivering more personalised content and products to the consumers, Selfridges is tapping into their customer's desire for exclusivity and convenience. By creating a service that combines both online and offline experiences, Selfridges is more than a mere place for shopping. Instead it is now creating a centre for engagement, which fulfils more than one need. Furthermore, by identifying the meteoric rise of content platforms, such as Instagram, Selfridges is now providing consumers with access to instant gratification, by additionally launching a transactional app, which allows consumers to directly purchase products from their Instagram account.



















As a progressive retail display agency we wanted to provide the industry with insights that were founded in robust human science, and reflective of the current changes in retail. More importantly, the report needed to provide new, accessible tools to future-proof the retail sector's prosperity as we move into the fourth industrial revolution.

This neuroscientific intelligence is not a single, foolproof answer for how retail needs to re-posture
as it voyages through into the next, unknown
revolution, but certainly an exciting and pioneering
way of looking at the biological processes in play.
By understanding these processes we are better
equipped to protect the retail sector and support it's
confident navigation towards this new world of habits
and expectations.

Ever humbled by such a wonderful group of talented people, I would like to thank the team at Seen Displays for their endless trust, patience and motivation.

- Lucy Hackshaw

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