

**Breaking Technological Meta-Paradigms:
Selling the Unspeakable**

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Abstract

This is a unique, path-breaking paper seeking to open up an area for analysis. It focuses on the technology of perception and introduces a number of new concepts as part of a theory-building effort. It is argued that the taken-for-granted perceptual space has been shaped by a sensory order. The notion of vision and auditory as 'higher senses' and the other channels as 'lower senses' derives from Aristotle. Western art became predominantly visual or auditory and this influenced the technologization and commodification of these perceptual channels. However, the technologization of the other perceptual channels (the 'proxo-senses') is emergent. This paper seeks to theorize what will be a fundamental technological shift of the 21st century.

KEYWORDS: *Technology; Meta-Paradigms; Perceptual Space; Marketing.*

INTRODUCTION

The Aristotelian Hierarchy

Aristotle in his analysis of psychology and the soul developed the idea of a hierarchy of faculties, including perception. Within perception was a sub-hierarchy of the five senses. Touch was at the bottom as one of the 'animal' senses, preceded by taste and smell. Auditory and vision were the 'human' senses with vision being the most ennobling sense. However, the 'knowing' of many objects required more than one perceptual channel and the integration of all perceptual channels into combined images was 'common sense'. This combining, according to Aristotle, was a higher order mental process (Aristotle: *De Anima*; Lawson-Tancred, 1986; Everson, 1997; Jutte, 2005).

While Aristotle extolled integration, at the same time he laid the foundations for disintegration with his creation of a hierarchy of the senses – in effect a sensory ordering. These assumptions of higher and lower senses was taken over by ascetic Christianity and the 'lower senses' (touch, taste and smell) were associated with gluttony, the erotic and the 'sins of the flesh'. This sensory ordering has persisted through the Western philosophical tradition and aesthetic, leaving the lower senses marginalized (Howes, 1991; 2003; Drobnick, 2006). Diaconu (2003), with some exaggeration, refers to this as a rule of "academic silence", and suggests that only a handful of French phenomenologists (Merleau-Ponty, 1962) have taken time to consider the lower senses. The work of Foucault on the 'technology of the body' has been extremely influential in understanding issues of social and organizational control, but he had nothing to say on the technology of perception (Foucault, 1995; McKinlay, 2005). Indeed the new journal - *Senses and Society* – indicating the current revival of interest in the senses across the humanities, in its first editorial emphasizes that the modernist assumption of the unity of the subject has been replaced in the post-modernist frame by the assumption of the

unity of the body (*Senses and Society*, Editorial, 2006:6). This unexamined replacement leaves the sociality of sensation as a mute issue.

Objectives and Layout of the Paper

This paper seeks to examine this gap in theory and bring together a wide variety of literatures in order to build theory relating to the technology of perception as a fundamental component of organizational control. This is an ambitious task, but the paper seeks to be a beginning.

The layout of the paper is as follows:- The nature of human perception is briefly assessed using recent work from cognitive science and cultural anthropology. A contrast between vision (a 'higher' sense) and smell (a 'lower' sense) acts as a way of grounding the argument throughout. The necessary conditions for, and state of play of, technologization are then discussed using company reports, marketing literature and primary research. Finally, the effects and implications of the technologization and commodification of all perceptual channels are discussed drawing on the critical management literature. Table 1 is central to understanding these latter processes. Key propositions are drawn out of the discussion as we proceed. Some counter-arguments are also considered.

Please note that because of space limitations several key arguments can only be presented in summary form.

A PARADOX OF PERCEPTUAL DISCOURSE

We are all familiar with the rainbow. Transiently, it stretches across the sky in all lands and forms a cognitive map of colours. We have known it since nursery school or kindergarten. Further, there is a language of colour. Knowing the rainbow, most of us can recite various rainbow rhymes for violet, indigo, blue, green, yellow, orange and red. Most of us left nursery school with a rainbow map in our heads plus a discourse of colour. More refined colour terms – pink, grey, cream, aquamarine, French blue and so on – are widely known.

In vivid contrast to vision, the language of smells, odour descriptors, is virtually non-existent with little consensual vocabulary. Moreover, there are no systematic odour cognitive maps and the few terms that exist – musky, camphoraceous ('moth-balls'), musty, and so on – cover only a small fraction of odour space.^{1 2} This lack of discourse generates a problem at

¹ WHAT IS A SMELL? The general requirements for a substance to generate an odour are threefold – that the substance is volatile, hydrophobic, and have a molecular weight less than approximately 300 daltons. The size requirement is a human biological constraint and the cut off is very sharp – from 'smell' to 'no smell'. The first two requirements makes simple physical sense as the molecules have to reach the nose (volatility) and cross membranes (hence hydrophobic), (Turin & Yoshii, 2000). Volatility simply means passing readily into a vapour. All liquids and solids give off vapour, consisting

the level of marketing. The marketing of smells searches for a language and generates only mysterious analogies. A mapping process takes place in an arbitrary way. A visit to a large supermarket chain (UK, 11/3/06) illustrates that the bathroom/toilet fragrances on offer present with the such names as ‘Lemon Zest’, ‘Fresh Apple’, ‘Fresh Grapefruit’, ‘Polar Sky’ and ‘Blue Silk’. These are the ‘Toilet Duck’ version of smell descriptors. Two things are happening in this labelling. First, is the mapping onto colour terms: ‘Blue Silk’. Second is the mapping onto flower smells or fruity smells: ‘Fresh Grapefruit’. Neither mapping may have, and in this case do not achieve, any relation to the origins of the odorants, or even the smell of the natural ingredients. Even limited investigation shows that smell is a neglected sense and the lack of everyday discourse indicates the problems of communication and marketing.

Classen (1993), Diaconu (2003), Howes (2004), ICI (2005), Morris (2005) and Drobnick (2006) all note the Western neglect of smell and Diaconu argues that smell perception reaches the boundaries of language and ineffability. Further, that in relation to smell and taste most modern Western languages make no distinction between transitive and intransitive use of the terms.³ Instead, the elaboration of language has taken place across the visual field such that visual metaphors (foresight, insight, second sight, focussing, strategic vision) dominate the English language.

This neglect of the proxo-senses (touch, taste and smell) is echoed through Western philosophy, phenomenology, and even cognitive science where the majority of research is focussed on vision. Further it permeates the Western media and popular discourse where ‘smell’ is seen as primitive and associated with insults or flatulence (Morris, 2005:65).⁴

of molecules of the substance. This volatility is temperature related. Thus on a frosty winter’s night, amidst the low molecular activity of the cold, humans can sense a smell silence (Turin, 2006). Odorant receptors in humans were only discovered and genetically isolated in 1991 by Buck and Axel (Turin & Yoshii, 2000; Axel, 2004). It is not clear how they work. There are two main theories – molecular shape (the odotope theory) and molecular vibrations. Both theories have experimental evidence against them. However, note that no two odorants have ever been found to have the same odour. The resolution of the human vision system is finite and limited. The resolution of the human olfactory system is infinite.

² The most common visual representation is sometimes called the ‘Aromatic Fougere’ or the ‘Fragrance Wheel’. This is a coloured clock face of smells created in 1984 as a selling tool in department stores. It divides smells into four ‘families’ – floral notes, oriental notes, fresh notes and woody notes. As the origins and labels suggest, it is far from being a systematic classification (Edwards, 2006).

³ Thus, ‘The bird sees.’ has an unambiguous meaning. But, ‘The bird smells.’ can mean that it stinks or that it is a kiwi bird that is seeking food by active smelling. Though it is not his primary purpose, Day’s work (1996) attempts to quantify the neglect of smell by examining linguistic metaphors across hundred of texts – smell consistently falls off the chart.

⁴ In this vein, the media usually only features stories about smell when they can interpret it as instinctive. Thus the media emphasizes stories about human pheromones and non-rational responses to scents (e.g. BBC News, 25 April 2006 ‘Fertility Sparks Male Rivalry’). It should be noted that there is no definitive research that human pheromones exist. The only result that has some research basis is the

These considerations lead to the first proposition:-

P.1 Logically, it is possible that cultural priority is given to some (or all) of the perceptual channels, creating a 'sensory order'.

P.1A As a corollary to P.1., other perceptual channels may be de-emphasized or even de-legitimated - ('the sins of the flesh', political correctness, etc).

Despite the long neglect of smell as a sense, the situation may be changing and some of the issues described above may be reshaped. However, before we can understand this we need to unpack the notion of a 'sensory order'.

THE DYNAMICS OF A SENSORY ORDER

The sensory order is characterized by a number of key features. These are delineated below.

1) The first principle is hierarchialization, as already discussed, deriving from Aristotle. This cultural hierarchy of the senses generates suppression of some sensory signals, (Damasio, 2000). For example, smell tends to be reduced to bipolar extremes, such that warning signals (e.g. burning smells) register at one pole and, at the other pole, attracting smells (e.g. baking bread) reach consciousness, but the vast range of odours in the middle fade into vague obscurity, touching the edge of memory.

2) The second principle is that of transmutation rule(s). In the Western cultural case, it is posited that the fundamental transmutation rule is the conversion to the visual. Vision and visual understanding is seen as the primary form of understanding and social practices tend to be transmuted to the visual or understood in terms of the visual. For example, this tends to be true of communication patterns, such as e-mail replacing the use of the telephone in office communications; texting replacing talking in mobile phones. The dominance of the visual is indicated too by the tendency for Western culture to transmute non-Western art reflecting a different sensory order into the purely visual. For example, the Navajo Indians in North America traditionally created sandpaintings. These have been absorbed into Western museums and art exhibitions as *visual* displays. But for the Navajo, the tactile qualities are essential (Howes & Classen, 1991). Thus a fundamental rule of sense-making (Weick, 1995) is to convert to the visual. It is impossible to understand this process without considering the sensory order. To give this process a conceptual label, it can be termed 'mono-channelling',

so-called McClintock Effect whereby human females in closed communities tend to coordinate their menstrual cycles over time *perhaps* based on pheromones. Even here, the Lund University Pheromone Research Group has not been able to duplicate the effect (Lund University). Ironically, pheromones are not the same as smells, but depend on vomeronasal organs.

which *can be defined as cognition through, and abstraction to, one perceptual channel*. ‘Mono-channelling’ can be construed as the opposite of cross-channelling (see below). It can also be construed as the opposite of ‘common sense’.

3) There are counter-tendencies to principles (1) and (2) which can be described as ‘sensory broadening’. At one level, these tend to be ‘counter-cultures’ emphasizing music, tactile and aroma. But note that these remain at the level of counter-culture – from hippies to aromatherapy. These counter-tendencies can also be market-driven as corporates seek new market niches and opportunities. This can be exemplified by the moves towards ‘broad sensory branding’ in marketing (Lindstrom, 2005).

4) The notions of a transmutation rule and counter-cultures suggest a conflictual dynamic. It is argued here that the marketing of products is currently caught up in such a dynamic between mono-channelling and sensory broadening.

The above considerations lead to a second proposition which enlarges the notion of a sensory order:-

P2. *All sensory orders are characterized by hierarchy, transmutation rules, and counter dynamics.*

Counter-argument I. There is an immediate counter-argument to the notion of mono-channelling. Surely, it can be argued, multi-media is a basic technological trend of the 21st century. Doesn’t this contradict mono-channelling as part of the Western sensory order? This is a confusion of terms and levels of analysis. Most ‘multi-media’ means the linkage of *visual* media or *exemplifies* transmutation. For example, the multi-media conversion of mobile (cell) phones in practice means that the mobile acts as a video-camera, displays videos, links to visual computer images, plays computer games, sends text messages and so on. The mobile becomes less and less an auditory device (Ito, 2003). There are a few creatures on earth, mainly crustaceans, that have eyes on stalks that can rotate so that one eye can view the other – this is the most fitting metaphor of ‘multi-media’.

Counter-argument II. The notion of a sensory order is not intuitively apparent. As a consequence people tend to resist the idea, despite the widespread acceptance of social constructionism concerning less fundamental matters (*Senses and Society*, Editorial, 2006). The argument runs that ‘surely, all animals, more or less, occupy similar sensory envelopes and the sensory envelope is biologically-given; it is inevitable’. In order to assess this counter-argument, we turn to consider the nature of the sensory envelope.

SHAPING THE SENSORY ENVELOPE

Humans occupy a sensory envelope. We all possess ‘five’ perceptual channels or senses⁵. The perceptual channels can be characterized in various ways. One way is to recognize that they are associated with different scanning ranges, such that vision and auditory carry the longest range, and that touch, taste and smell are more proximate senses or ‘proxo-senses’. However, this is not absolute. The Andaman islanders feature in the anthropological literature as a culture with a different sensory order and a strong culture of smell based on a calendar of floral scents (Classen, 1993; Howes, 2004). The general theme that emerges from these studies is that vision has a restricted scanning range in tropical rainforests, it becomes more of a proxo-sense, and smell and auditory have to take over.

A sensory envelope is partly biological, partly psychological and partly socially constructed. It is worth taking time to consider these levels. *Each species lives in its own sensory world.* Birds, for example, have a weak sense of smell and taste, but can see in the ultra-violet range (UV_A 315-400 nanometres) and have magnetoception as a sense (the ability to detect flux direction in the earth's magnetic field) (Gill, 1994).⁶ This species-specific set of limitations defines the biological nature of the sensory envelope, but this does not exhaust the tracing out of the sensory envelope.

Despite our intellectual pretensions, humans are faced with a small window of mind. In other words, there are too many signals appearing every second to become conscious. This is the capacity problem of information processing which can only be solved by multi-layering, selective attention and the suppression of many signals (Damasio, 2000; Handy, 2000). To some degree, what is suppressed depends on the culturally given sensory order that we have tried to delineate (Howes, 2003).

To summarize: the species-specific factors combine with the neurological and the psychological factors, such as the capacity problem generating selection and suppression. In

⁵ It is important to be careful here. The ‘tactile’ sense is not unified in a simple way. Many cognitive scientists break it down into *six* systems – touch, muscular, temperature, pain, visceral and vestibular. This is collectively known as the ‘somatosensory system’ (Damasio, 2000:149-153; 318). Some neurologists group the six systems into three divisions – the internal milieu and visceral division; the vestibular and musculoskeletal division; and the fine-touch division (Damasio, 2000: 149). Second, at the cultural level, Howes (1991) argues that other cultures have varying concepts as to what constitutes a mode of perception and have other counts and differentiations of the perceptual channels.

⁶ Birds are a vast species and all generalizations need qualification. While the sense of smell is generally poorly developed in birds, there are variations depending on the ecological niche occupied. Ground-feeders, such as the kiwi, have a well-developed sense of smell; so does the North American turkey vulture. Other species, such as the pelican, have olfactory openings that are completely covered and non-functional. Magnetoception also varies. There is a considerable debate in ornithology on these issues (Gill, 1994; Parker, 2005).

turn, this complex of factors is shaped by the sensual culture. This can be expressed as a third proposition which puts Proposition 1 into a broader context:-

P.3. Humans occupy a sensory envelope which is species-specific plus psychological (the capacity problem leading to selection and suppression) and shaped in turn by the sensual culture.

This sensory order helping to shape the sensory envelope is a fundamental level of social and organizational control. It is because of this that social theory cannot blank out the sensory order. ‘Perceptual space’ is another way of thinking about the sensory envelope. They are not equivalent terms, because the emphases and connotations are different. ‘Sensory envelope’ tends to indicate the biological constraints, while ‘perceptual space’ as a term tends to indicate a variable and controllable arena. Nevertheless, I will treat these terms as interchangeable.

Counter-argument III. There are arguments against a sensory order and against any idea of mono-channelling. Specifically, there are cognitive science theories which emphasize the inter-linking nature of the senses. Surely, it can be argued, this collapses the idea of a sensory order? In particular, it raises conceptual problems in considering the perceptual channels as ‘channels’.

‘THAT BIRD IN THE SKY SMELLS PURPLE’ – SYNESTHESIA

Synesthesia raises fundamental issues about a sensory order. Synesthesia can be defined as the merging and experiencing of two perceptual channels into one. For example, sounds may appear to have a colour or colours to have a smell. Children are more likely to have synesthesia, losing it as they get older, but several alleged geniuses and brilliant composers have reported synesthesia (Cytowic, 1993; Harrison & Baron-Cohen, 1996; Damasio, 2000:348; Ramachandran & Hubbard, 2001). The most famous current synesthete is Daniel Tammet who can calculate π to 22,514 decimal places, broke the bank in Las Vegas and learnt fluent Icelandic in one week (Tammet, 2006).

Synesthesia is an extreme form of Aristotle’s ‘common sense’ and raises the issue of what can be termed ‘cross-channelling’ – this is the notion that the different perceptual channels are interlocked. The link of taste with smell seems intuitively obvious to us, but a current theory in cognitive science is that vision and the tactile are interlocked. This is termed the ‘enactive theory’ of perception. Most ‘vision’ is enactive and generates a focus on the immediate and the limited. It is the perception of hand-eye coordination; the perception of a foot-propulsion sequence. It is non-holistic, non-macroscopic and body-linked. According to Noë, (2004:9)

“The basic claim of the enactive approach is that the perceiver's ability to perceive is constituted (in part) by sensorimotor knowledge.” To put the idea graphically: ‘Vision sees the action’, including the forthcoming action in a sensorimotor sequence. Damasio (2000:147) puts the enactive view more strongly:-

“There is no such thing as *pure* perception of an object within a sensory channel....concurrent changes are *not* an optional accompaniment. To perceive an object, visually or otherwise, the organism requires both specialized sensory signals *and* signals from the adjustment of the body which are necessary for perception to occur.” (*Emphases in original*).

This is one crucial sense in which the brain is embodied. It should be made clear that the enactive theory of perception is not fully accepted by cognitive scientists – it remains one theoretical possibility. However, even if we accept the enactive theory at the cognitive science level, it does not change the probability of a *cultural* order in relation to the senses. Much of the cognitive science argument relates to semi-conscious (or pre-conscious) cognitive processes. A social construction process shaping perceptual space is still possible in the context of such cognitive processes and the anthropological evidence indicates this (Howes, 2004).

So far, we have defined a sensory order, the dynamics of a sensory order, a sensory envelope and perceptual space. Further, we have introduced the ideas of mono-channelling and cross-channelling. Given the absence of literature, these were essential conceptual steps to provide us with the theoretical basis for considering the commodification of these processes.

COMMODIFICATION of THE PERCEPTUAL CHANNELS

The notion of commodification entails converting things or processes into marketable, profit-generating goods. Privatization of water supplies represents a useful example. The above discussion of the perceptual channels raises an intriguing issue - how can tens of thousands of unlabelled smells be converted into ‘goods’? How can we market the unspeakable? The steps involved are fourfold. First, the establishment of the ownership of property rights – patents, copyright, trademarks, monopoly rights, secrecy and so on may be involved. Second, a system of governance for producing the ‘good’. Third, some technology for delivering the ‘good’. Finally, there is the marketing dimension – achieving a community of consciousness of a ‘good’. The second issue is not central to this paper, and we will briefly address the other aspects.

First, as technology reshapes the landscape of the possible, there are intensifying attempts to monopolize the basic smells. For example, there have been attempts to win trademark rights at the European Union's trademark agency for the smells of fresh strawberries, raspberry, lemon, and vanilla. So far, only trademark protection has been granted to...the smell of freshly cut grass! The smell was registered successfully by a Dutch odour company that uses it to give tennis balls their distinctive aroma (BBC News, 27/10/2005; EU Trademark Court Proceedings, 2005). In contrast to basic smells, many complex scents are covered by patent, or locked up by traditional secrecy practices. Each of the large smell corporates has a library of tens of thousands of odorants. However most of these databases are proprietary and not available for research or scrutiny. The knowledge is closed off and the degree of overlap between databases is unclear (Author, 2006).

One recent case indicates the level of current conflict. L'Oreal has successfully won a case in the Dutch Supreme Court under copyright law (not patent law) arguing that a Lancôme perfume called *Tresor* had been copied by a Dutch firm, Kecofa. *Tresor* retails at £40 while the Kecofa copy (*Female Treasure*) costs about £3. Copyright law was used successfully for the first time in Europe on the basis that *Female Treasure* was not an exact copy, but used 23 of the 26 key chemical ingredients. The case is subject to appeal. (*The Times*, 29 July, 2006).

In summary, the situation with regard to property rights over smells is mixed and transitional. The fragrance industry increasingly expects the technology of delivery systems will be crucial. Thus, the dimension of commodification associated with delivery, namely technologization, is discussed next.

Technologization and commodification of the perceptual channels has followed the Aristotelian hierarchy. Vision has predominated as illustrated by the long and extensive history of the visual arts, photography, movies, television, computer images and so on. This has been based on and reinforced by cognitive maps of the visual and systematic parametrization of the visual, such as the RGB colour coding system used in all electronic media. This process of technologization of specific perceptual channels has encouraged a sense of mono-channelling, of social beliefs that reality can be reduced to one channel. Thus, many young people have become addicted to videoing of people, places and sex as a way of 'incorporating the other'. The technologization of the visual (video) and auditory (audio) is now taken for granted. However, it can be argued that society is at a cusp of the technologization of the other perceptual channels. The implications of this have not yet been considered in any systematic fashion.

One technological dilemma in relation to the proxo-senses is whether to commodify them in a mono-channelling way (tele-smelling as in the 'iSmell' software package) or whether to commodify them as additions to existing products ('smell-o-rama' whereby movies are presented with a smell dimension). The key delivery system issues are the stability of smells, the accuracy of smell (this is the parametrization issue), and the required refresh rate (Author, 2006). None of these issues have been completely solved, but the technology, as represented by the so-called 'Aromatron', has advanced rapidly since 1990. There is an emerging technology of digitized smells. Computing technology will in the near future be able to control the production of smells in the same way that it controls video or audio (iSmell; smellscape, etc). Such computer control gives corporates the freedom to separate source from scent in an entirely new way and would render many proprietary fragrances meaningless. Such digitization expands the process beyond the obvious industries, such as perfumes and toiletries, to a wide range of ambient technologies and possible signalling technologies. By 2005 considerable progress had been made on an odour-recorder, like a smell VCR. It has 15 chemical sensors with partially overlapping specificities and an olfactory display based on a maximum of 96 synthetic chemicals currently (Nakamoto, 2005). The accuracy for a limited range of target odours is high.⁷

While there are odour clusters that most mammals recognize (Laurent, 2002), these lack verbal or numeric labelling. In consequence, it is not yet possible to parameterize smells. The only way that this is attempted currently is in terms of synthetic chemical listings linked to the pattern of responses of different olfactory receptors (Turin & Yoshii, 2000:20). Again this has been done for limited odour space. Note that parametrizing is essential for comprehensive delivery systems in the same way that the visual is dependent on the RGB colour coding system. This leads to a fourth proposition concerning the necessary conditions for technologization-

P.4: Technologization of a perceptual channel involves the ability to separate source from sensual input plus a delivery system. In turn, a delivery system requires cognitive maps and a parametric system.

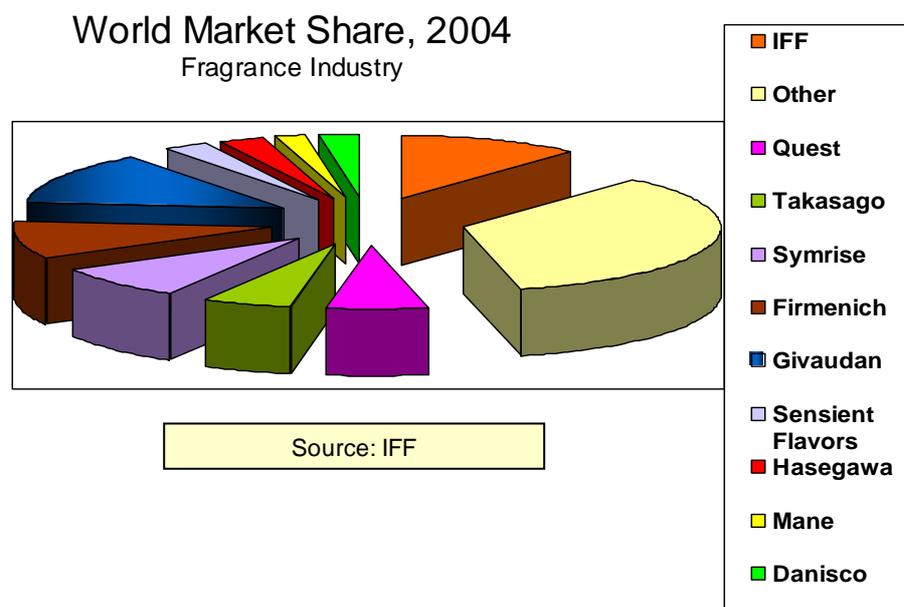
Dealing with the issues of property rights, governance and technology of delivery are all supply issues. What about demand? There is not space to address this fascinating question fully here. A few basic points will be made. In general, profitable supply has depended on a

⁷ Solving the delivery system problem has proceeded in various ways. One issue is dispersion and the spatio-temporal control of smells. This has been addressed by nose attachments (like headphones for audio - clumsy and limiting) and, alternatively, by air cannons – a relatively successful prototype according to the inventors (Yanagida, et al 2004).

community of demand and, at one extreme, standardization of demand. This raises the issue of whether there is a smell community or does smell depend entirely on individualized emotional linkages to the past? Will market leverage depend on the evolution and domination of a smell discourse? This is where 'smicons' come in – these are attempts by the fragrance industry to create brand smells, symbolic smells or icon smells (Lindstrom, 2005). The psychological research shows that odours act as memory triggers and the memory of smell does not decay with time (Engen & Ross, 1973; Engen, 1992), so smicons could prove to be very effective. This leads us to the fifth proposition extending proposition four:

P.5: Commodification of a perceptual channel requires a set of cognitive maps in order to create a community of consciousness of a 'good'.

The technologization of smell is driven, in part, by the large corporates. The smell industry is no longer that of a Parisian backstreet workshop – a craft industry. Instead, the biggest players are the fragrance corporations; fragrance synthesis is a \$10 billion industry dominated by several large firms, such as IFF (International Flavors & Fragrances), Quest, Givaudan-Roure, Firmenich, and Takasago, (see Figure 1). Launching a new perfume, or fragrance, costs up to a million pounds currently. However, these launch costs are miniscule compared to the pharmaceutical industry, where the launch costs of a new drug may be \$800 million and only one in three approved drugs covers its costs of capital (McNamara & Baden-Fuller, 2006). Instead, the key market issue is the saturation of the market exacerbated by static or declining value growth of traditional fragrances from 1999-2004 (Global Market Information Database, 2005).



TECHNOLOGIZING PERCEPTUAL CHANNELS – A 21ST CENTURY STORY

A brief consideration of the nature of the fragrance industry as an example of commodification and technologization leads to a broader set of conclusions across all the senses. These are summarized in Table 1. First, column 1 orders the perceptual channels by scanning range as discussed above. Column 2 illustrates the current state of play in connection with commodification and technological development. The high level of development of vision and auditory has been noted and is a commonplace. It is indicated that smell and tactile are at a transitional stage whereby tele-smelling and tele-haptic are feasible with fast developing technologies. There is not space to deal with the issues of tele-haptic in detail. Again, I will make a few basic points (see Geary, 2002; Paterson, 2006; Classen, 2006). The term refers to computer-generated tactile sensations achieved over a network by sensors and effectors. It has also involved bio-feedback systems. Much of these systems are unwieldy unless the human body can be *directly* networked. Red Tacton trialled by NTT in 2005 does just that, turning the surface of the human body into a data transmission path currently at speeds of 10 MBPS. The implications of this are revolutionary (NTT, 2005). It also parallels the developments in the olfactory channel. Much of these developments have occurred since 1990 and have accelerated in this century. Currently we are faced with trial technologies and some unresolved issues. Taste is still at a lower level of technological development and the cognitive and cultural barriers will be extremely high. The development of electronic tasting devices which mimic the human tongue (Robo-Tongue) are only a beginning.⁸

Column 3 indicates the level of channel usage in connection with marketing. The visual is used for 85% of marketing communications in one form or another (Lindstrom, 2005a). Auditory chews up virtually all other consumer communications leaving a non-registering fraction for signature smells, used in brand promotions, and some tasting promotions. For example, the Westin Hotel chain has utilised one of the fragrance corporates to develop a signature smell, called 'White Tea', based on vanilla, for its hotels worldwide – it is used in the bedrooms and in the public areas, so that as soon as a customer walks in s/he can 'feel at home' (Lindstrom, 2005; Tischler, 2005). Signature scents have also been developed for Samsung, Sony, Rolls Royce Cars and many other large corporates (Tischler, 2005). In contrast, the tactile sense is too proxo-body in the current politically correct culture to be

⁸ Again, we must be careful to note what is being said here. The development of taste technology in terms of processed foods or processed food restaurants, like MacDonald's, is irrelevant. The technology that matters is the separation of source from final sensual input and tele-delivery systems. The Robo-Tongue is designed to replace human tasters in the wine and coffee industries (Overby, 2002).

utilised for promotions. The marketing data tell us much about ourselves, but is only an indicator of the broader social signalling use of these perceptual channels.

Another set of indicators for assessing the social use of these perceptual channels is a consideration of the social controls on face-to-face human interaction. Column 4 is speculative at this stage. It indicates the current degree of social control exercised in connection with these perceptual channels. Vision and auditory are least controlled. This does not imply the absence of controls and the controls over discourse have enormously intensified during the past 20 years. However, there are still qualitative differences from the proxo-senses. Smelling is seen as weird or quirky, possibly offensive behaviour – best avoided. Tactile behaviour is deemed in many cases to be sexual harassment and most Western offices have become terrains of ‘de-touching’. Finally, interactive tasting will cost you your job.

Table 1 PERCEPTUAL CHANNELS & MARKETING

Perceptual Channel- ordered by scanning range	Current Development of Commodification & Technology*	Marketing Use^λ	Social Controls on Interaction
Vision	High - video	Very high usage 85% of communications	Low
Auditory	High - audio	Medium usage 15% of communications	Low
Smell	Transitional techn. Aromatron-2000. Odour-Recorder-2005	Culturally ignored. Signature scents developing. Sensory branding.	Medium. Quirky or offensive behaviour
Tactile	Transitional techn. Telehaptic techn. RedTacton means that the body becomes a data transmission process-2005	Culturally ignored	Very high. Western offices as zones of ‘detouching’
Taste	Low. Little technology. Robo-tongue-2002	Only used for ‘tastings’	Extremely high. Illegitimate or illegal.

* ‘Technology’ *df.* as the ability to separate source from sensual input plus delivery system
λ The focus here is on marketing processes, not the products.

Table 1 reminds us that whatever the technological advances towards tele-smelling, tele-haptic, and direct body networking, the commodification of the proxo-senses will not be feasible without social and cognitive changes. This creates a dilemma for marketing as marketing collides with the sensory order. This collision is implicitly recognized in some of

the recent marketing and PR efforts of the fragrance corporates. For example, Quest (as part of the ICI Group) has produced a recent major report on the senses promoting, in effect, a new sensory order – the headline is an invitation to become a new ‘sensory athlete’. The argument is that people should seek to achieve a new sensory balance (called ‘sensism’) and unlock the secrets of the senses (ICI, 2005). This is a document consciously advocating widespread cultural change.⁹

CONCLUSIONS

Perceptual space is not a biological given, but a socially-constructed channelling dependent, in part, on the sensory order. Sensory orders are a technological meta-paradigm (Kuhn, 1970; Lakoff & Johnson, 1980; Dosi, 1988; Wijnberg, 1995). Breaking such a paradigm will generate a different society. Underlying this assertion is the notion that technologies of perception are not just aids to abilities, but play a fundamental role in the constitution of human experience (Lenay, et al, 1997). All societies develop a sensory culture or a sensory ordering. The result is that perceptual issues are taken for granted at a fundamental level – the last frontier of social control. Western culture has given priority to vision and to a lesser extent auditory sensing. The result is that outputs from other cultures have been transmuted from, for example, tactile to vision without recognition of the aesthetic distortion. This sensory ordering has been reinforced by technologization and commodification, such that a virtuous (vicious?) cycle has been set up.

However, commodification moves with a non-cultural dynamic and the technologization of the other perceptual channels are at a transitional stage. This will be a fundamental technological dynamic of the 21st century. However, it sets up contradictions. At one level, there is a clear marketing need to break cognitive barriers and to convince that there are products-to-buy. At another level, there is the notion that the proxo-senses can be a source of manipulation and control. This is a meta-strategy dilemma. The results will be played out over this century.

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⁹ COUNTER-ARGUMENT IV. There is a counter-argument to these perceived trends – namely we have been here before and now, like then, it will all run into the sand. For example, Heilig developed ‘*Sensorama*’ in 1962. This involved multi-channel movies with smells and breezes, though it was not interactive. Even by 1992 (30 years later) Heilig was arguing that this was the cinema of the future (Heilig, 1962; 1992). Tracking signs, but not trends, McCarthy (1984) developed an odour-emitting system termed ‘*Smeltizer*’ which was used in DisneyWorld. The difference now is the broader shift in technological capacity.

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